# THE IDEAL HOUSE

H. BRYANT NEWBOLD

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*by*

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"HOUSE AND COTTAGE CONSTRUCTION"

(4th Impression)

"THE MODERN CARPENTER AND JOINER"

LONDON:

PRACTICAL BUILDING PUBLISHING Co. LTD.

Stafford House, Norfolk Street, Strand, W.C.2

'Phone: Central 1972

1928

*Printed in Great Britain*
*by*
*Hunt, Barnard & Co., Ltd.*
*London and Aylesbury.*

# PREFACE.

THERE is an idea abroad that because every one lives in a house, everybody can design one ; and whilst the idea is, perhaps, a natural one, it would be as reasonable to say that because most people eat eggs they can also lay them.

In fact, the house, and in particular the small house, is perhaps the most difficult problem with which the skilled designer is faced. For it is in its very smallness, in which so many imagine its easiness to lie, that the extreme difficulty consists. This is in a measure comparable with the painting of a miniature, wherein every tiny error becomes a glaring fault which jumps from out its surroundings, solely because of the small scale on which the whole is conceived.

But there are more difficulties confronting the designer of the small house than those which oppose the painter of a miniature. He is hedged in on all sides with restrictions. There is not only smallness of space, but also smallness of cost, generally accompanied by largeness of requirements on the part of the owner, to be considered. Also, and no doubt of far more importance than all, there are the requirements of the owner's wife. An architect, a very experienced designer of houses, and possibly also somewhat of a cynic, once said to the author, " If you would design a man's house, you must first make love to his wife." Cynic or not, it is certainly true that he would be a foolish designer who did not study to give effect firstly and lastly and throughout to the requirements of the lady of the house. She it is of the whole family who spends most of her time in the house ; and, in the majority of small houses to-day, it is she who does most of the household work. Therefore it is only reasonable that her needs should have the first consideration. A man will have all that he considers necessary to the expeditious running of his business, and think it right that he should do so, and so it is. Equally right it is that he should see that his wife is supplied with

every possible convenience to enable her to effect a smooth running and comfortable establishment, however small it may be.

But this is rather a different thing from stating that because a woman is mainly concerned in the running of the home, therefore she should design it ; for there is something more than a knowledge of what one wants required in designing the ideal home. It is a knowledge of how to supply the want ; and that requires technical training and intense specialisation of many years' duration.

The ideal designer of a home would be he or she who combined a knowledge of housework with that technical training. Such a one indeed might well lay claim to have discovered some, though no doubt not all, of the points which go to the designing of the ideal home.

For this small book the claim is made that it is the result of experience gained by the writer, not only from the designing of many houses in England and America, but also from a by no means inconsiderable share in the domestic work in both countries. In consequence no apology is made for the presentation of what is felt to be, no fancy nor imaginative picture, but sound practical advice gained from arduous practical experience which has now extended throughout a quarter of a century.

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Plate I.—Artistic Effect of Outside Chimney.

## Chapter I.

# General Considerations.

### Doing One's Own Housework—The American and English Plan Compared.

THE designer of houses should keep himself abreast of the times. Perhaps it might not be unreasonable, though indeed it might not be very popular with those chiefly concerned, to suggest that their training should include a course of domestic service. For, whilst a fond love for the old and artistic may lend a quaintness to a design, yet battles with old-fashioned fireplaces, which smoke because of their construction, can never be entirely satisfactory to the housewife. An old-fashioned monumental kitchen range, lit by an overworked husband in the dark hours of a mid-winter morning; enforced route marches from widely separated kitchens and dining-rooms; and any archaism which increases housework will soon convince anyone undertaking his own domestic work, even one with the strongest leanings towards the antique, of the need for the application of science to the forward movement of house design.

But failing the inclusion of a course of domestic training in the curriculum of the architect, a useful purpose may be served by a study of the plans of houses built to-day in countries where it is customary for people to do their own housework; and in a comparison of these with the English plan, the solution of much of our domestic

service problem may be discovered. For example, in America and Canada the domestic servant, except for the very richest families, is practically non-existent; and where people do most or all of their own housework they are more concerned with utility than art, and every possible labour-saving device will be appreciated. And should such a study result in an artistry that is at the same time thoroughly practical a very decided advance in domestic design will have been achieved.

To enable this comparison between the English and American plan to be made, and in order that the proper logical inference may be drawn, it is necessary to recall the sources from which our modern house has been evolved, for it is only reasonable to expect, in the houses of a country with a history like ours, that there will be found traces still existing of apartments whose uses have long since passed away.

If, for instance, the original purpose of the hall of a mediaeval mansion be compared with those of the entrance of to-day a very significant example of what is meant will be perceived. In fact, the English house of to-day is, in plan, what remains of the mediaeval mansion after it has been shorn by circumstances of nearly everything which mediaeval modes of living originally called into being. In the middle ages the hall was the general reception room, where anyone, benighted, might claim and receive hospitality. The hall is in fact the origin of the Public Inn. Travellers were fed there, taking their seats at table in accordance with their degree, and afterwards slept therein, on rough couches or beds of rushes on the floor. Consequently, the hall needed to be spacious. Also, the evening meal, in days when social distinction counted for so much, was necessarily attended with much ceremonial. Where it was a matter of importance whether one sat above or

below the salt, it is only natural to find the service of a meal no light matter hurriedly performed. On the contrary, the chief cook followed by his staff attended in full panoply; the joint borne on high reached the raised table by devious routes; and the matter of expedition in clearing away was not one which concerned the diners in any way. As a result, the planning of the kitchen with

Fig. 1. The Lounge Hall.

regard to the hall was rather benefited by the interposition of lesser halls and corridors than otherwise.

But to-day, when one has perchance cooked one's own food, one does not feel in the mood for ceremony, but only to eat it, and that with despatch. Where every unnecessary step means added fatigue, and every additional space an increased necessity for cleaning work, passages and hallways are to be avoided.

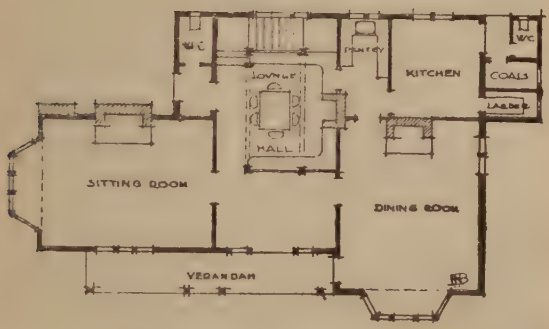
Nevertheless, if almost any plan of an English house designed to-day be examined it will be found that the

kitchen is separated from the dining-room by an entrance hall, and if the reason for this be asked, it will be claimed in extenuation that the practice prevents the smell of cooking from penetrating from the kitchen to the dining-room. This is a fact. But whether it is agreeable or not may be open to doubt. For smell, so intervened, must find its way throughout the house by way of the staircase, which is usually found in the hall.

**Fig. 2. An adaptation of the American Plan, showing direct Service to Dining Room from Kitchen.**

In the American plan, however, this interception is achieved by another and a more convenient means. The American designer places a small room in between the dining-room and kitchen, keeping them both on one side of the hall; and he terms the small room, very logically, a pass pantry. This pantry is fitted with a sink for the washing of china and cutlery, and also cupboards for their reception when not in use. The amount of walking saved by this simple expedient will be obvious, as, in practice, the china and cutlery need not leave the pantry for any

other purpose than use at a meal; whilst the dishes and pots used in cooking remain in the kitchen where another sink is fixed.




GROUND FLOOR PLAN

**Fig. 3. Modern Plan, showing Pass Pantry.**

There is no disputing that the coal fire imparts a homely feeling, and at the same time it is equally true that there will be found few, if any, who prefer laying several fires and cleaning up several grates, to keeping alight, once lit, a central heating furnace. This is a matter in which much still remains to be done by us in England; where up till now, central heating has been applied in a practical manner only to larger buildings of a more or less public character, whereas in America, no houses, however small, would be thought complete without some source of central heating being supplied.

With us a variety of reasons militate against its general adoption; and of these perhaps the chief is the necessity for some form of basement or cellar for the accommodation of the furnace or boiler. We are prejudiced against the

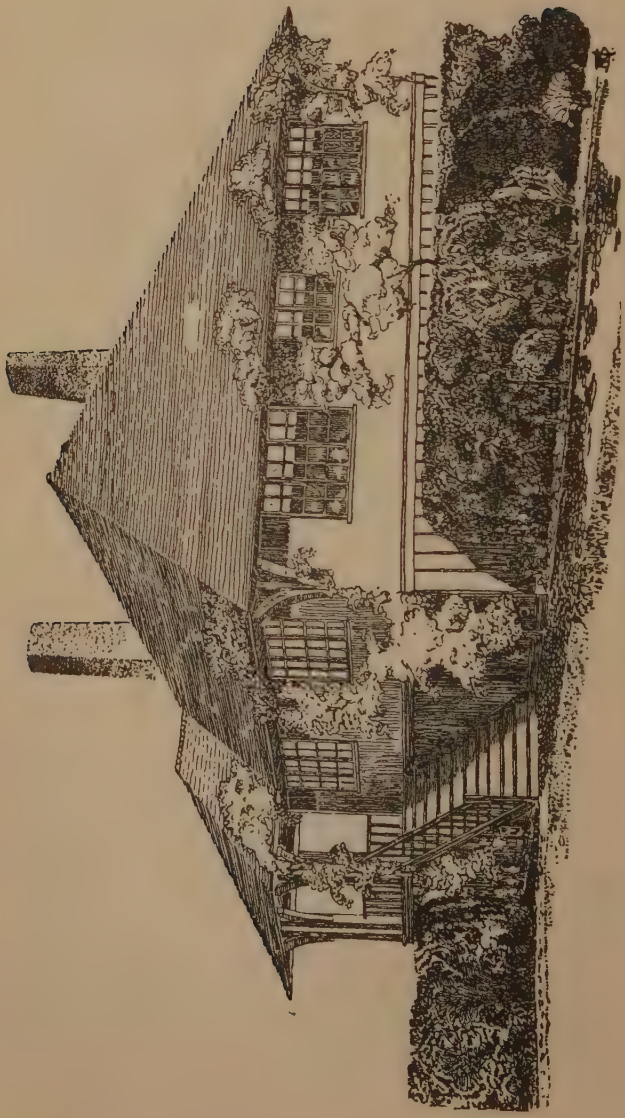


Fig. 4. A Bungalow on a Raised Basement.

cellar and very rightly so where it means an underground chamber for human habitation with little light and no view, as was often the case with our kitchens of the Victorian era; but the same objections do not exist in connection with the sub-basement, half in and half out of the ground, such as is adopted in the American house; though it will no doubt be claimed that this practice of raising the ground floor several feet above the level of the ground outside gives to a house a stilted and uncomfortable appearance, entirely doing away with that long and low appearance so typical of our English house which nestles upon the site.

This again is a matter which is open to discussion; for though it is true that the average American house does look perched up and sometimes top-heavy, this need not be. It is, like everything else, a matter of proportion, as figs. 4 and 5 show, especially that of the bungalow, which consists of a number of rooms all on one floor built in an exact square and raised four feet from the ground outside. Yet it could not be described by anyone as perched up or top heavy. On the contrary, its proportions are exceedingly beautiful in their simplicity.

Also, where a house is situated upon a site that is hilly, or slopes rapidly, the fall may be turned to great advantage in this matter of a cellar to house the heating plant. The illustration of the second and larger house shows such a one, where the fall being towards the left hand of the picture, the kitchen and offices were planned upon that side of the house, and underneath, without the necessity for any excavation, were provided the heating chamber, laundry, cold storage and coal stores. Yet the result cannot be described as ugly or ill proportioned.

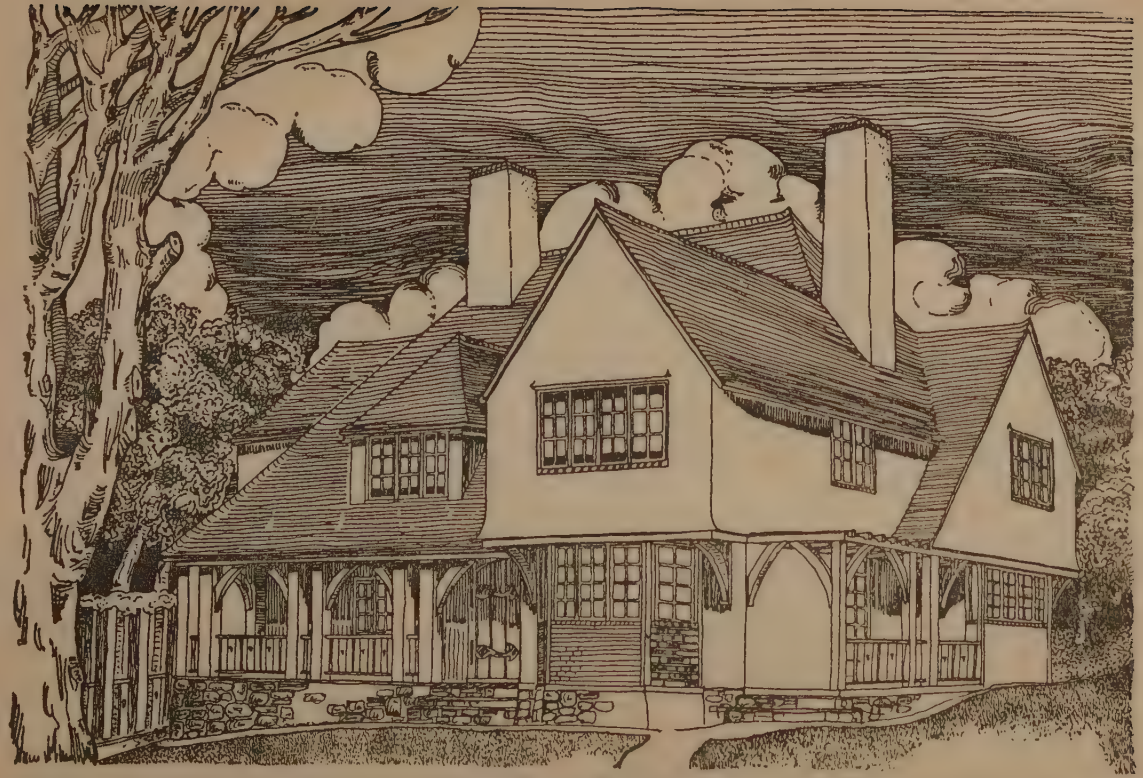


Fig. 5. The English Elevation of an American Plan. This house was built in Victoria, British Columbia, for an English family.

## Chapter II.

## Design.

Good Design and Good Construction go Hand in Hand—Good Design means a Saving in Expenditure—Plan and Elevation must be Designed Together.

WHILST it is now fairly generally recognised that it is good building alone that pays, even the best efforts on the part of the builder will be of no avail unless good building has gone hand in hand with good design. Good design is the first essential. A well designed house of good proportions is, so long as it lasts, a pleasing sight; but a badly designed house can never be pleasing however perfect the construction may be. There used to be an idea abroad that good design meant expensive work, and that poorly designed houses were cheaper to build. Never was anything further from the truth. In fact, good design, which includes proper and suitable use of materials, depending rather upon proportion than on applied surface decoration, is now acknowledged to be much cheaper than bad design.

In this the average builder should be well equipped, for good design is, after all, merely the application of common sense. The possessor of sound common sense will be saved from committing many of the indiscretions of the professor: and given this first necessity, a knowledge, or rather an instinct for, the suitability of things and the true relationship of one part to another, will go far to enable the practical man to produce really good design.

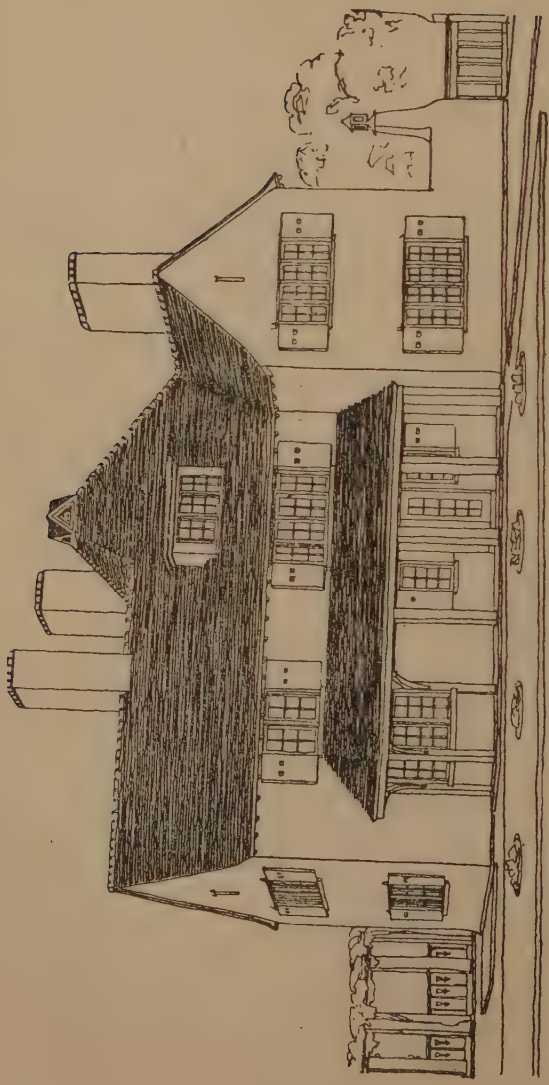


Fig. 6. Simplicity the Essence of Good Design.

## Plan and Elevation.

The first necessities are the requirements of the plan, or in other words, how many rooms the house is to contain ; and the next the aspect of the site and any features such as roads or other buildings adjoining which constrict the site. That living-rooms should face the sun at midday or during the afternoon is generally acknowledged, and that the front door should be handy to as direct an entrance from the road as possible is obvious to most. These are demands which permit of no argument and so far may be said to influence the design apart from the will of the designer.

But the theory, that the plan of the building must be drawn completely first, and the elevation fitted to it after, is an entirely wrong one—only less wrong is it than that the elevation should be settled upon first and the plan fitted to it afterwards. That of course is the most wrong of all methods by which to set about design.

No ! The correct method to design a house is to roughly lay out the disposition of the rooms one to another, having in mind the required accommodation and the demands of the site, aspect and roads as already mentioned ; and then to rough out the elevation to see what type of house externally such requirements will call for and produce. Later when this has been settled upon both plan and elevation should be completed together. In fact it is a matter of give and take between plan and elevation. They must be married and not divorced.

## The Resident's Requirements.

If the house is to be built as a contract for a particular client the matter will be simplified to the extent that the proposed resident will have views as to his requirements.

Fig. 7. The Elevation should express the Construction and Plan.

At the same time the designer's work will be rendered the more difficult in that the client will often demand requirements which, if not impossible, will call for a good deal of technical skill to execute, if not tact to circumvent. Here it may be mentioned in passing that it is often wiser to give even that which the designer knows to be wrong than to force upon an unwilling resident that which he does not want, however correct it may be. For the resident has to live in the house, and, persuaded against his wish, he will never get over it so long as he stays in that house. It is a sad fact that this should be so, but so it is, and it may as well be realised. The writer could relate harassing tales of a life-long offence given to a client's wife, who wished for 12 ft. high rooms because she was possessed of some window poles of that length. The young and ardent designer dared to suggest that the poles might be laid on the floor along the skirting!

However, experience teaches; and above all it teaches that where there is a client for whom the house is to be built that person's requirements must form the starting off point of the design.

## Town or Country?

Whether the house is to be built in the town or country, detached, semi-detached, or one in a row, will, of course, have a very determining effect upon the design.

A house on a street and one of a row does not offer much scope for the designer, nor is it possible to give much consideration to aspect or view. As the site must be on either one side or the other of the road, and if the road runs north and south, or east and west, one elevation of the house in either position is bound to be sunless or almost entirely so. The best that the designer can do then is to

confine his efforts in the main to achieving as great a degree of comfort within by the convenient disposition of the rooms one to another, and to clothe them externally with the quietest, well-proportioned elevation. The plain brick wall with nicely proportioned holes for doors and windows of the Queen Anne period had much to recommend it. It was at least inoffensive.

The main difficulty which the house in a row will present is that there is no possibility of obtaining windows in the side walls ; generally too, the site of each house is often so narrow as to prevent more than one room facing to the front. However, owing to the growing recognition of town planning laws this last point is growing less exacting as the number of houses to the acre being restricted they cannot be placed so close together and consequently be given such narrow frontages.

Another great objection to the narrow fronted house is that the designer is almost compelled to give a front door entering upon a narrow passage in which the staircase must be accommodated ; so that on opening the front door one is immediately greeted by a flight of stairs, more often steep than not owing again to the restricted space which can be allotted to them.

However, that such an unpleasant feature can be avoided on occasion may be seen from the plan illustrated in fig. 8. The stairs, it is true, consist of a straight flight, but they are so disposed as not to be directly opposite the front door, and by a careful treatment, such as is shown in fig. 11, a pleasing effect is gained. By the introduction of windows the stair is turned and the same height gained in the same space and yet the general appearance of the narrow hall is entirely altered. The living-room facing both back and front makes the plan suitable for either side of the road, and it is bound to get sun sometime during

Fig. 8. Ground Floor—House in a Row.

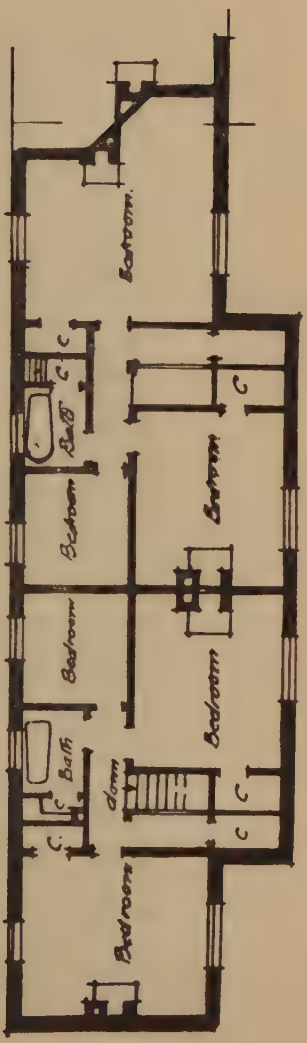



Fig. 9. First Floor.

Fig. 10. Elevation of a House in a Row.

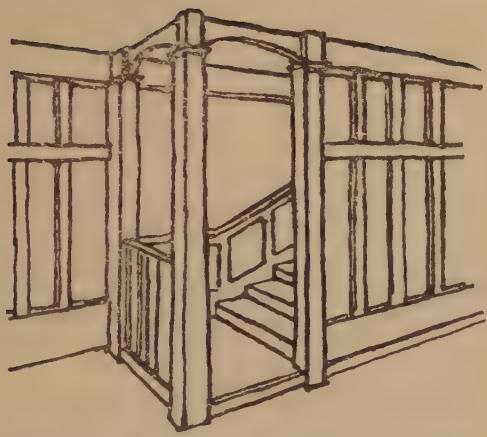


Fig. 11. An Artistic Treatment of the Stairs.

the day. An additional airiness is also given to the staircase passage by means of the open archway into the living room. A larder is provided, though the type of house is small, and a cupboard under the stairs provides a store room. A special feature of the plan is the large cupboards in the two main bedrooms, which render movable wardrobes unnecessary and so save floor space. A bathroom and linen cupboard and also a store cupboard are provided ; the last being suitable for an additional w.c. if such should be desired.

## Chapter III.

## Design—*continued.*

The Designer's Eye—Seeing Lines or Cubes—Good Proportion—The Human Figure the Basis of Good Proportion.

REFERENCE was made in Chapter II. to the fact that the plan and elevation must be worked out together and both should be arrived at from each other. It may not be clear what is meant by this. Consequently the following explanation is given.

### Seeing Lines or Cubes.

One of the main difficulties in designing is that the would-be designer thinks or sees with his mind's eye in dimensions to which he has grown accustomed from his previous training. For instance, if a person with no training at all be asked to describe the size of, say, a box, he will perhaps compare the box with something else with which he is accustomed in daily life and while he is giving this description he will space out with his hands what he believes to be the width and height of the object. But rarely, if ever, will he give the depth or, as the technically-trained man will call it, the plan. Again, if an office-trained person wishes to convey his impression he will do so in lines upon a plane surface having no depth. He will think in lines rather than cubes. On the other hand, the

practical man will generally think in materials rather than surfaces and be apt to lose that feeling for proportion which is so essential to good design.

## Seeing Geometrically.

To illustrate this more particularly the accompanying diagrams are given. Of these figs. 12 and 13, seen together, will be at once recognised as the plan and elevation of a simple cottage. Seen apart, by anyone untrained to reading plans, fig. 12 represents an oblong and fig. 14 a sketch of a cottage, but to him they are entirely unrelated. To read them together, as has been said, requires training;

Fig. 12.

Fig. 13.

but the point which it is desired to make here is that if fig. 12 be seen entirely by itself, it should at once automatically convey to the trained mind fig. 13 at least, and possibly fig. 14.

Fig. 14.

In other words the designer must think, not in lines or even in squares, but in cubes. This may seem somewhat

alarming, but the beginner in design need not be afraid, as the habit is soon acquired, once the principle is gained. That it is never gained by some is obvious from the defects often seen in buildings due entirely to the failure to realise what the finished work will look like in perspective. For instance, let examination be made of a domed pavilion—such as is designed for a bandstand, having the dome and cornice supported on columns set in a circle and the space between them open. Let us walk round it in our examination and stop when we come to a point from which the line of the outer face of the column comes flush with the base of the dome. This appears correct and reasonable. Now let us proceed in our walk and stop again when two adjacent columns are in line with one another and our eyes. Now look up at the cornice and dome, when it will appear to be standing on nothing, as shown in fig. 15, whilst the

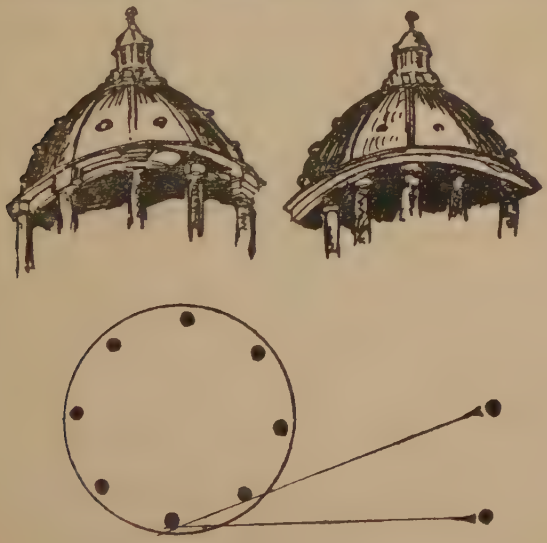


Fig. 15.

columns will appear to have gone back under the superstructure it is actually supporting. Further from this standpoint it may so happen that whilst one side of the building appears as above described, the other shows the column appearing in its intended position with the result as shown, of a lop-sided building entirely contrary to the intentions of the designer.

The reason for this illusion and for others which will readily come to mind, such as foreshortening of cornice, roofs, etc., when seen from below, is that the designer thought only on one surface, viz., the surface of the paper on which he was drawing. He forgot his perspective.

## Good Proportion.

All this may not at first appear to have much to do with the design of houses, but in fact it has, because the essence of good design is proportion, and good proportion cannot be thought out only upon one plane, and consequently depends upon the plan equally as much as upon the elevation.

Good proportion is really little more than the expression of reasonableness and suitability to purpose. For example, a tremendous bay window on a small cottage not only looks unreasonable and unsuitable, but it is so because it is obvious that a very large hole must have been left in the wall to admit light and passage from the bay, with the result that the wall of the rooms above appears to be standing on nothing. Equally a human figure carved in stone supporting a building is ridiculous because it is unreasonable on account of its disproportion.

## The Proportions of the Human Figure.

Incidentally it may be noted that the human figure supplies in its proportion of one part to another the very

best study of reasonableness and suitabliity of purpose. A well-proportioned human figure is above all things reasonable. A thin neck or a fat neck is not of itself unsightly, but becomes so only when judged in conjunction with the shoulders from which it sprouts, and with the

Fig. 16. The Human Figure wrongly introduced.

head which it supports. So in buildings, a classic column supporting a portico to a front entrance is not beautiful because its diameter bears a certain relation to its height, but only if its proportions give a sensation of sufficient strength for the purpose to which it is put. Reverting again to the human figure; the deep chest to house the

lungs and heart ; the breadth of hips to balance the trunk firmly and to carry weight with balance ; the slender but muscular arm denoting a capability to provide the body's needs ; and above all the poise and suppleness which the many muscles and sinews impart to the body's motion ; all these are good proportion and denote suitability to purpose. For this reason it is that the student of design is advised to study the human figure if he would gain an appreciation of what good proportion means.

## Narrow Frontages.

When frontages are very narrow the treatment of the elevation of the individual house becomes almost an impossibility, and it is then almost a matter of necessity to consider it as a matter of grouping. In plan a very narrow frontage leaves little to be designed. A room with a passage at its side is still a room with a passage at its side if it be on its left hand or its right, and, if the frontage is no wider than will allow of a room and a passage, all that can be said about it is that it ought not to be so. No one ought to be allowed to portion out the earth into 15 ft. frontages, and in any case such a measure prohibits any possibility of design. All that can be done with a row of such narrow frontages is to endeavour, by recessing portions and projecting others, to relieve the monotony of the row something after the manner shown in figs. 17 and 18.

In frontages of 25 ft. wide the matter of planning becomes less difficult and it is just possible to get two living-rooms side by side if one of these be a sort of lounge hall and a passage room ; but two rooms with a passage between them in 25 ft. reduces the size of the rooms to such narrow dimensions as to be almost useless to live in.

Figs. 17 and 18. Plan and Elevation of Narrow Frontages.

## Chapter IV.

# The Site.

**Effect of Site upon Design—Suitability of Type—Conformity of Outline.**

IN the general considerations affecting design treated of in the foregoing chapters, the restrictions enforced by the width of frontage have been discussed; and it should be mentioned that, at this stage, there is no intention of treating the subject otherwise than to consider, in a general way, any matter having an effect upon design. The designing of elevations and plans and the details, styles and types of these will be fully dealt with later.

## Effect of Site upon Design.

Restrictions of width of frontage, however, are not the only way in which the site affects the design. And here let it be said once and for all, that no house should ever be designed apart from its site. This may seem idealistic. But the subject under consideration is the science of design and not the selling of plans or any other form of merchandise.

The site must always be the main factor determining the design. The matter is very simply reasoned thus. Throughout the kingdom of nature, in the vegetable and in the animal worlds, individuals and the creations of

individuals adapt themselves and are adapted to their surroundings. It is this that makes nature beautiful. Consequently man, being the chief of the animal kingdom, must obey the same laws and fit himself and his habitation to his circumstances and his surroundings. When he fails to do this he is offensive and his works cry out against the harmony of nature.

Practically no house should be designed, no pencil should even be put to paper in the designing of a house until the proposed site has been visited, surveyed and its character absorbed. It may be news to some that sites can have an individuality, a personality, and if this be so then such certainly should not be the ones to consider the undertaking of design. For if one of the main factors in the success of a design is indeed its suitability to, and sympathy with, its surroundings, anyone to whom the personality of a site and its surroundings is not evident cannot embody that personality in his subsequent design. But there cannot be many to whom surroundings have no appeal. It is common to nearly all that one site is soft and picturesque, another rugged, hilly or mountainous, whilst a third from its bareness jumps to the perceptions as bleak. So to all sites there is a character which speaks to the perceptions, and this character must be perceived before a design in keeping therewith can be conceived.

The point does not need labouring. A walk taken anywhere in the country will supply abundant evidences of houses designed either in sympathy with or at war with their surroundings. With those of the first class, even at a distance, before we can discover the details, we sense a suitability; whereas with those of the second we are conscious only of discomfort, whether from afar or close at hand; and it is this suitability or otherwise which pleases or annoys.

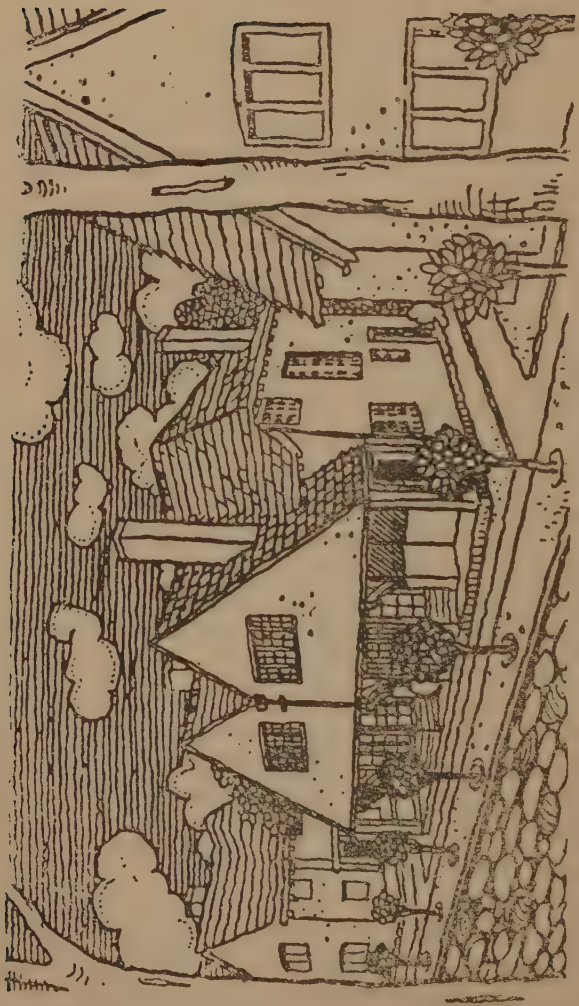


Fig. 19. A Semi-detached Pair.

## Suitability of Type.

Leaving for the moment the matter of a proper use of local materials as being one of the best ways of obtaining a design in harmony with the surroundings, let us consider the subject of the massing of our building in conformity with the prevailing characteristic of the country-side. Obviously a house upon a hilly site, to be in sympathy, must not be the same as one upon the level plain. A very cursory study of the old cottages throughout the country-side—these being examples of a natural craftsmanship—will give convincing proof of this.

It is perhaps a little difficult to study a subject like the old-time cottage, the individuality of which depends so much upon the use of local materials, apart from the materials of which it was built; in fact it is impossible, if we wish to receive the full lesson from such a study. This will be further gone into later when the subject comes to be dealt with as a whole. However, at the moment, what is desired is to show how outline, considered apart from the materials which give that outline, conforms to the nature of the district in old work and should do so in the new. This must not, of course, be taken as meaning that because in old work the outline conforms to the character of the surroundings it is right because it is old. Nothing is right for any such reason, but rather what is meant is that conformation with surroundings is as right in new work as in old, and is more often seen in old work than in new.

## The Fallacy of the Schools.

It is just this in which the teaching of the schools in design has been and still is so much at fault. In the architectural schools, the student, at the very outset of

his training, and before he has had time or opportunity to form any ideas of his own as to what constitutes excellence in design, is set to study the old work because he is told that it is good and will serve him as a model. From the start, as a consequence, his whole attention becomes centred upon old work, which he studies in the minutest detail, until, finding it necessary to specialise, partly owing to the complexity of the subject and partly to personal tastes, he becomes a devotee of either the classic or the Gothic styles. The result of such devotion is that the deeper he burrows into his subject the more limited his outlook becomes, until he loves a building not for its suitability to its site, or for the purpose that it is for, but rather because of its conformity with the examples of old work, every detail of which he has come to know by heart. He has learned that to ensure good proportion a column of a classic building had a diameter measuring a certain multiple of its height, and that all buildings built in any particular period of classic design had columns of that exact proportion. Further, he has learnt that the diameter of the column may be divided into a certain number of parts, and that these may be termed "modules." Having then divided his column's diameter into modules, and his modules into "parties," he finds upon further research that all portions of the architrave, frieze and cornice measure a certain number of these modules and parties. Consequently he reasons that all buildings designed in any of those classic styles or orders, as they are called, must, in order to be good design, have the same number of modules and parties as those over which he has spent so many hours of study. So a copyist is made and a designer lost to the art. So stately classic temples, originally designed for the worship of gods we now call heathen, under skies of blue and constant sunshine, are now found

doing solitary duty, stark, cold and vulgar in their unsuitability to their homely surroundings, as mansions in sombre wooded parks and on cold grey rolling downlands. So are opportunities wasted and the fallacious teachings of the schools perpetrated.

All of which may seem somewhat of a digression, though in fact it is not so if it serves to prove that the basic principle of the science of design is not servility to age, but an expression of suitability to purpose and to surroundings.

## Conformity of Outline.

Irrespective therefore of site or, for the moment, of the occupants' requirements, the massing and outline of the house must conform to the nature of the site. For example, it will be clear that a house upon a flat site cannot be the same as that upon the side of a mountain and still be suitable for both. Or to take an example even more extreme for the sake of developing the argument, let us imagine two sites facing one another upon opposite sides of a road winding round and up a very steep mountain

Fig. 20.

side. It will be conceded with regard to the house upon the lower site, as is indeed often the case, that the entrance

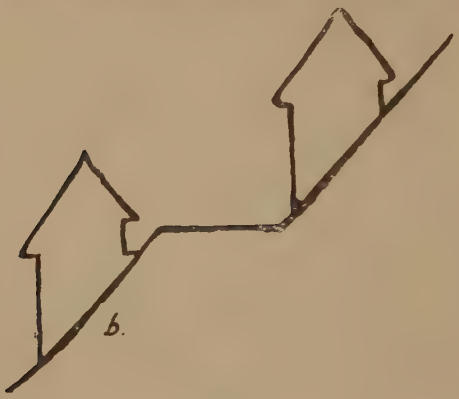



Fig. 21.

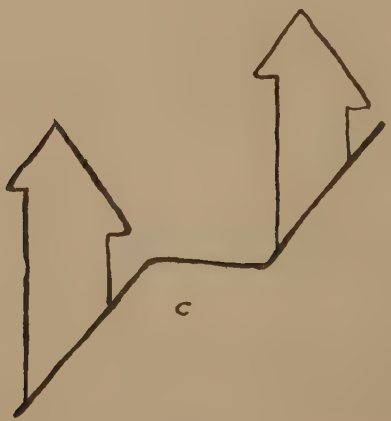



Fig. 22.

hall will come at a level usually occupied by the upstairs rooms, and unless the space below this is to be wasted the

rooms usually placed above the entrance hall must now be found below. Conversely the opposite is the case with the house on the upper site; but to both there is one point affecting their design in common. Both, in order to save considerable digging and cutting back into the mountain-side, will have to be as narrow as possible from back to front, and will consequently need to be wide from side to side in order to provide the required accommodation. Still further, a tall tower-like erection, such as that indicated in fig. 20 at *a*, will at once offend against a sense of fitness, perched on the side of a steep decline, conveying primarily a sense of insecurity. Something more on the lines indicated in fig. 21 at *b* will at once be recognised as more suitable, clinging and conforming to the mountain-

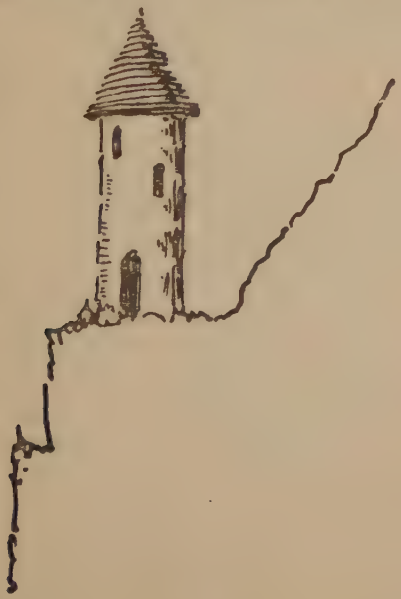


Fig. 23.

side. A comparison between figs. 21 and 22, which are the opposite of one another, will make this point clear beyond all argument, fig. 22 being obviously so extremely unsuitable that in order to find an outline that is suitable we must adopt its opposite, and this gives us the previous fig. 21.

At the same time a tower-like structure, as shown in fig. 20 at *a*, may be quite suitable upon a mountain-side if it is situated on the edge of a cliff, when it in fact becomes a tower and conforms to the pinnacles of rock as shown in fig. 23. Also a tower, or building with towers, will look in keeping upon the summit of a hill, whereas it is doubtful if it ever is quite right upon a level plain.

The level plain and the gently undulating site will naturally demand a rambling house, spreading out in all directions unrestricted.

## Chapter V.

## Materials.

Using Local Materials—Importation of Materials—Effect of Time and Weather—Construction.

WITHOUT further stressing the point it may be taken that conformity of the outline of the building with that of the site is the first necessity in order that the building may rest sympathetically with its surroundings.

### Local Materials.

Into this sympathy with surroundings enters also the character of the completed building, for every building has a character which depends not only upon its shape but also upon the materials of which it is constructed, though, of course, it is recognised that these materials mainly determine the resultant shape. In this a study of the old-time cottage of the countryside will help.

The old-time cottage may be regarded as nearly a natural product as can any work of man. For in the first place it was the work of men who lived closer to nature than can the dweller in a town. By this it is not intended to suggest that there was necessarily any conscious intention in the minds of the builders of the old-time cottage to fulfil conditions which make for good architecture by

using local materials, but rather that the matter was more in the nature of an accident which it was only natural should come about. What could men do, who moved in a very circumscribed area, whose daily lives were spent in

Fig. 24. Old-Time Buildings, showing use of Local Materials.

working the land in their immediate neighbourhood, but use those materials with which they were in daily contact when it became a matter of building themselves a dwelling as near as possible to their work.

Consequently a study of the old cottages of the countryside reveals that a stone producing district has cottages of stone; in forest land timber construction is in vogue; chalk subsoil finds expression in plaster covered walls, and where good clay abounds the art of the bricklayer is to be seen at its best in the homestead. The matter is as much a geological one as is the conformation of the land itself.

Into this also entered difficulties of transport. When transport was in many places non-existent, and when it did exist, so expensive as to place it beyond possibility for economic building, the idea of introducing materials from another district did not even arise, at least so far as cottage building was concerned. That stone from the Continent is to be found in English churches might seem at first sight to be a refutation of this, though in fact it is merely another proof of the excessive expense of road transport. For one of the reasons—there were others which do not concern the present point of the use of foreign stone, especially in old-time churches and cathedrals near the coast—was the fact that transport by water was cheaper than by road.

That, however, is by the way; the main point for present consideration being that though almost every known building material is to be found used in the English country cottage of mediaeval times, yet rarely, if ever, is there to be found one which is out of harmony with its natural surroundings. This is because, local materials having being used, harmony resulted.

This matter is more than one merely of the sympathetic texture and colour resulting from the use of materials indigenous to the district. It goes further to the extent that communication from one district to another being difficult, men stayed much at home and working in their

local materials handed on their methods of work verbally from one generation to another. These methods the nature of the material went far to determine, with the result that the construction of the building being the best which local experience had taught for that material contributed a local character, which had its origin in natural causes, again productive of a harmonious result. So that districts of great natural richness gave rise to buildings of a refined beauty in strong contrast with the wild and rugged spirit of districts where stone abounds. Yet each is in equal harmony with not only the surroundings but also the character of the native population.

## Importation of Materials.

It would be difficult to say anything too bad about the practice of importing materials into districts where a natural suitable material for building exists. The fact that the practice is growing so rapidly as to be fast becoming accepted as customary makes it no less wrong. For example, to import bricks and tiles into a district like the Cotswolds, where a beautiful building stone abounds, is a crime from the designers' point of view ; and the fact that we hasten to cover these imported bricks with cement roughcast only makes matters worse. We are no less murderers because we bury the corpse. Nor does the claim that bricks can be imported and laid more cheaply excuse the crimes of socialistic labour in the destruction of craftsmanship. To decry the fact that the skilled mason is dying out does not excuse a supine acquiescence in us to such a regrettable state of affairs. It augurs rather a very urgent need for a keen revival of the best features of the mediaeval guild craftsmanship. To restrict the number of craftsmen in any industry in order that there may be an abundance of

work for those restricted few is a short-sighted policy, and in direct contradiction of the professed undertakings of the trade unions. The trade unions declare that their main object is the betterment of the living conditions of the operative. How this is to be brought about by allowing crafts to die out not even they can explain. On the contrary, it must be obvious to anyone who gives the subject any thought at all that the way to keep a craft alive and so to produce work in plenty is to encourage people to enter that craft and to raise the best features of craftsmanship. This means, of course, a revival of apprenticeship, and in that direction lies progress, for whilst you can make whatever provision brain power and energy can conceive for the members of a busy craft, it is certain that no provisions, however careful, can affect a craft that is dead.

## Time and Weather.

In rendering full homage to old-time craftsmanship, and particularly when comparing it with modern work, the effect of time and the weather upon the surface of the materials should be borne in mind so far as is possible. Whether it is possible at all to do this or not may be a matter of opinion, but in any case it must prove beneficial to the student of design if he try in whatever way he can to picture those old-time buildings which time has toned to such harmonious and mellowed tints, as they looked when first built and before the weather had softened their angles and caused vegetation to render them the more harmonious with their surroundings. From such a study, whilst there can be no disputing that nothing short of an earthquake could make some modern buildings artistic—and then they would need moonlight to look their best—yet it will evolve

that much of the modern work will be far more in harmony with its surroundings if it be still standing a century from now. But neither time nor weather can conceal vulgarity in design, and the classic masterpiece in unsuitable surroundings can be every bit as vulgar as the over-decorated and ill-proportioned monstrosity.

## Construction.

Construction is the basis of all design in building. This fact cannot be over-stressed. All ornamentation which does not arise from and is not a definite external expression of the internal construction is merely applied art, which, though of itself may have distinct claims upon our appreciation on account of its inherent beauty, yet is not, and never can be, considered as part of the design of a building. The test is, could the decorated members be removed from the building and the building still stand? If it could, then it is not constructive decoration and is therefore unnecessary to the building.

To make the matter more clear, let the porch of a small house be considered. A porch is a useful feature in almost any house, however small, in that it serves as a protection to the front entrance against the weather. In fact the smaller the house the greater the need for a porch of some sort. For often the space is so confined that entrance from without has to be made into a very small hall if there is a hall at all, or, as is more often the case, directly into a living-room.

Fig. 25. A Verandah.

But the acceptance of the fact that a porch is necessary to the comfort of the occupants of the house does not excuse the designer from any further effort than is necessary

Fig. 26. A Verandah arising out of the Construction.

to affix a porch externally in such a manner that it bears no more relation to the design as a whole than does the scaffolding by means of which the house was erected.

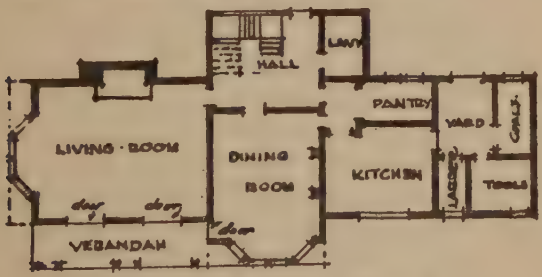



Fig. 27. Plan of Figs. 25 and 26.

Such external application, both in the case of the scaffolding and the porch may be removed when the building is complete without affecting the constructive stability of the building. Neither, therefore, is constructive design, and no one would think of leaving the scaffolding up after the building is finished. Why, therefore, should a porch

externally applied, stuck on the face as if in afterthought, be left to indicate glaringly the incompetence of the designer?

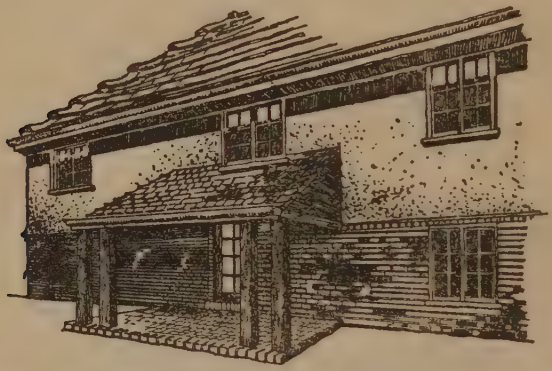


**Fig. 28. An Applied Porch, bearing no relation to the Design.**

It should not. On the contrary, the properly designed porch should form a part of the whole building without which the building could not stand. If a porch is required it is the designer's duty to so dispose the other requirements that they provide structurally a porch, and there are several ways of doing this. For example, a requirement very frequently met with by the designer, especially in designing a small house, is the need for more floor area for bedrooms than for the sitting-rooms and offices. This is a requirement so frequently met with that it is somewhat surprising that the obvious way of supplying the demand is not more frequently seen in modern work. It may seem almost blatant to say that if more floor area is required on the upper floor the thing to do is to give it. But that, obviously, is the thing to do, and our study of mediaeval work cannot have been much use to us if it has not taught us the means by which the designer by project-

ing his upper floors over brackets and columns increased his floor area at the same time as he enhanced his design. Treated in this manner our porch becomes a recess without decreasing the area to be occupied by the ground floor rooms, and our elevation becomes beautified by an irregularity of surface which arises out of the structural necessities. The recess, brackets, columns or posts cast pleasing shadows, relieving the surface from a too flat dullness, but no one or part of any of these could be removed from the building and the building stand. This is constructive design.

## Chapter VI.

## Planning.

### The Hall.

IN the last chapter, mention was made of the fact that construction is the basis of all design in building. Equally true is it that planning must go hand in hand with elevational design. Nowadays perhaps there are very few persons who still think that the proper way to design is to get an elevation that pleases and then fit the plan to it; but it is to be regretted that there are many who feel that the plan should be drawn first and the elevation adapted to it. Of such a view of design as the last, the best that can be said is that it is not quite so wrong as that the plan should come from the elevation. Neither is correct. Plan and elevation should be as united and inseparable as are the two legs of a pair of trousers, and each are equally essential to the whole.

## Planning.

Nevertheless, bearing this point carefully in mind, it is obvious that a plan must be drawn first giving the required accommodation. But the point which it is desired to make is that in the drawing of this plan, the appearance that the lay out will have and contribute when the whole is erected in elevation must be as much an influence on the designer as are the requirements. By this it is not meant

that elevational effects are to be gained at the expense of the requirements. For example, houses there are in which delightful effects externally from low-reaching roofs make bedrooms in which there is practically no horizontal ceiling ; again, passages are introduced in order to enable rooms to be placed along one side of a house and a corridor effect gained thereby—the artistic effect gained is pleasing, but the result wasteful of space in planning ; again, very artistic creations in house design there have been which delighted everyone until it was found that the more prosaic matter of drains had been entirely overlooked.

One would not need to be a constructive designer to gain such effects as these ; to be a scenic artist would serve as well.

There are certain points in planning which the designer cannot afford to overlook, however strong his inclination towards the artistic may be, and these apply generally in domestic design and are of particular importance in the small house. And it would not be out of place here to refute another popular misapprehension in this matter. It is popularly supposed that a small house, being small, is an easy thing to design. Some such reason as that everyone living in a house, consequently everyone can design it, is given. Why not say, with just as much reason, that as everyone eats eggs, everyone can hatch out a sitting of spring chicks ? In fact the contrary is the case, the small house is the most difficult problem with which the designer can be faced. To plan a small house is a very tight-fitting operation, and is applicable to the grenadier whose perruque was twisted so tightly that his eyebrows could not be lowered. For, naturally, when an area is confined and there is much to be fitted therein, there must be a good deal of give and take ; so much so is this the case that often the mere placing of the studs in a partition or

partitions makes the whole difference between what is and what is not possible.

There is also the very natural desire on the part of the owner of a small house that the most should be made of what is, in whatever light we may wish to regard it, only a small thing. Small people are said to be more self-assertive than large ones, and for the owner of a small house, in which all the rooms, having their different purposes, of necessity come close together, a certain desire, without being a pretentious one, to make the best of everything, especially first impressions, is not only natural, but an estimable one.

Consequently one of the first requirements will be that as much as possible should be made of the entrance hall. This at the very outset is a somewhat knotty problem, for where space is so limited for the whole house, to allow any for an entrance hall at all seems almost like proposing something quite out of proportion. Nevertheless, the hall is as essential to the amenities of residence in a small house as is any other feature for a variety of reasons. Firstly, the hall, without being a sort of no-man's land, forms a convenient waiting place for callers whom it is not wished to admit without ceremony directly into the privacy of the domestic life, and whom at the same time it is not wished to affront by leaving upon the doorstep. So that space for a seat, at least, is requisite. Combined with this also a fireplace, even if there is no fire, adds a sensation of welcome.

Further, the hall is the obvious place for the stairs, and these, if properly treated, can be made to enhance the artistic vista which greets the eye as soon as the house is entered. For whilst a staircase hall is really only a passage on end communicating from the rooms on a lower floor to those on floors above, and in such a sense is un-

suited for use as a living-room, whatever may be said in support of the usefulness of a hall as a living-room lounge, this is no reason why as much as possible should not be made of its artistic possibilities. And there are great possibilities in this direction about the staircase if a small space be allowed for its accommodation additional to that usually allowed when only the purely utilitarian needs are considered.

To elucidate this point, because it is felt to be an important one, designers being loth to " waste " space in halls, the accompanying plans and elevation illustrations are presented. They indicate imaginary, though typical, halls of both types—the first two the purely utilitarian,

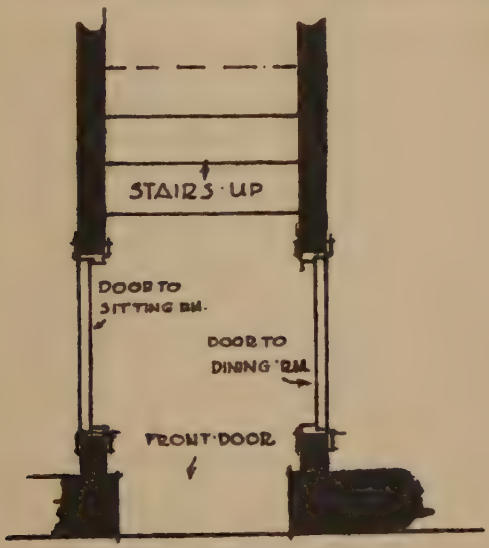



Fig. 29. The Passage Hall.

and the third a hall in which slightly more space, though really not much, has been allowed.

In the utilitarian ones, space only is allowed for the stairs to rise between the walls of the sitting-room and

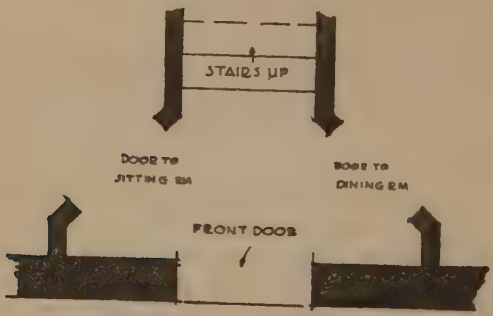



Fig. 30. The Passage Enlarged.

dining-room on either hand, a slightly increased floor area being obtained by cutting off the angles of these rooms, as in fig. 30. The idea is, of course, a slight improvement on the straight passage of the boarding house type, shown in fig. 29, and by means of pilasters and arches can be rendered not too unpleasing in appearance; but there is no getting away from the fact that the stairs are directly opposite to the front door and are the first things seen by anyone entering. The angles of the rooms being cut off, besides giving additional space in the hall, also removes the doors from points at the foot of the stairs. This is always an unsatisfactory position for a door and may be the cause of accident.

In the slightly more extended hall shown in fig. 31, as will be seen, there is nothing immediately facing one entering the front door except the door communicating to the kitchen by way of the pass pantry. This being as it should be, a swing door will always come to rest in a closed position. Consequently the eye not being attracted thereby seeks other points of interest which it finds in the

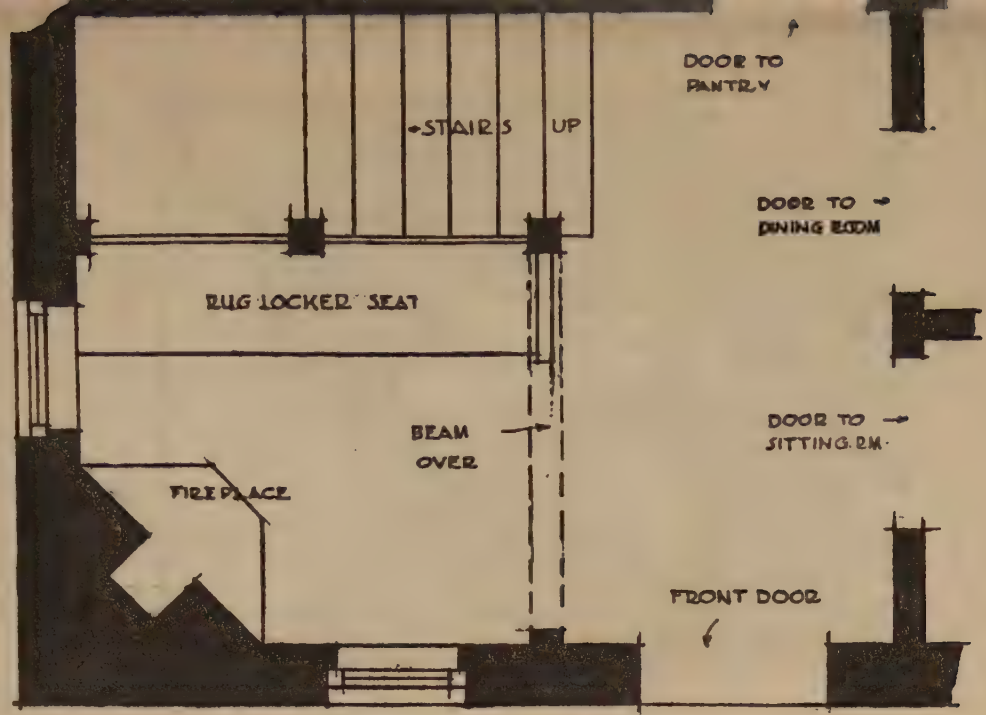



Fig. 31. A More Commodious but Economical Hall.

seat with its cut pew end, an elevation of which is shown in fig. 32. Further, owing to the position in which the stairs have been placed, the closed string and balusters

Fig. 32. An Artistic Hall.

facing the hall provide a suitable space against which a permanent rug locker may be fixed and so provide that seat which has already been referred to as desirable. Resting here while waiting, one is faced with a fireplace

set angularly across the corner; which though of cheap construction, cannot be otherwise considered but as a desirable adjunct and one adding considerably to the artistic effect.

To tie the staircase posts, which take the place of newels, together with a ceiling beam and to insert cut brackets such as are shown, whilst in no way occupying any more of the floor space than would the customary newels, does give almost the effect of the fireplace and seat area being a separate small room on its own without its having actually a partition.

By such means an additional room, if only a waiting-room, is gained to the small house, and that without the expense of building partitions; and it is by such means as these that to design well is really less expensive than to design badly or not to design at all.

## Chapter VII.

### Planning—*continued.*

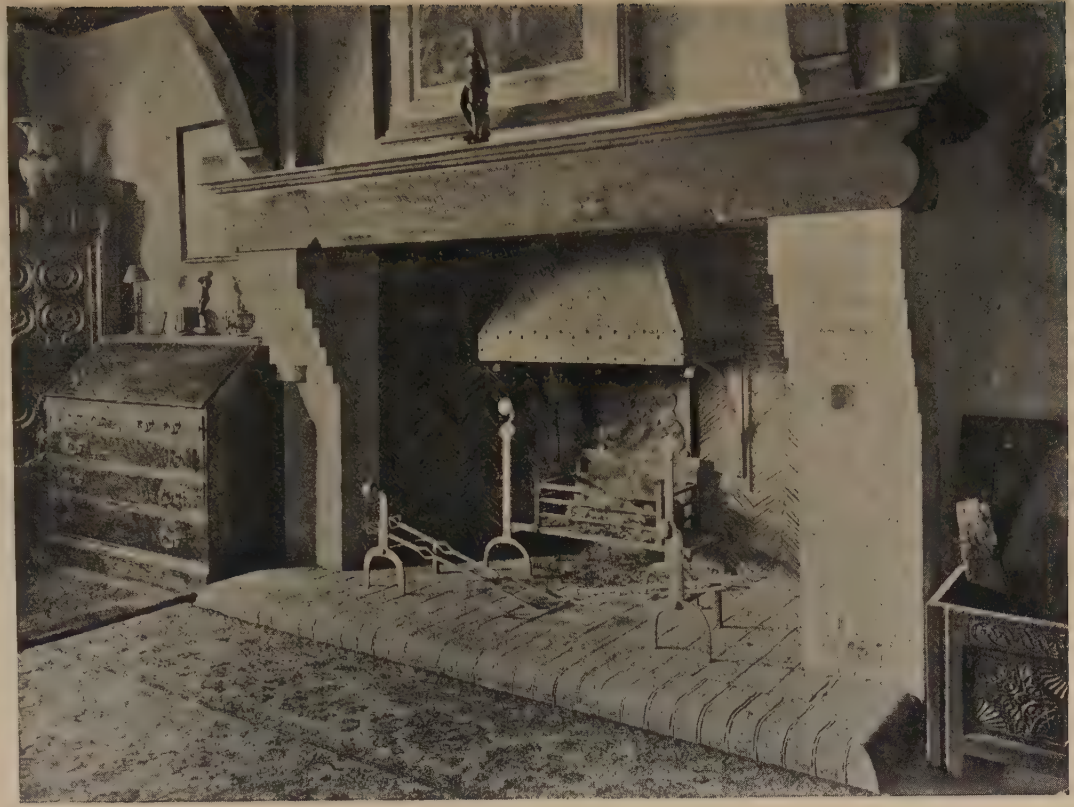
The Dining Room—The Drawing Room—The Serving of Food—The Pass Pantry—The Dining Room (contd).—Serving Hatches—Plan of Dining Room—Fireplaces in General.

THE subject of the hall and its planning so that it might economically be made to serve the purpose of an additional room was treated of in the last chapter. It is now proposed to deal with the two usual reception rooms, drawing and dining rooms, and to show how much may be done to increase the comfort of these merely by the introduction of scientific treatment and disposition of the various features which all such rooms possess. The relation of the American Pass Pantry to the dining room is another instance of how method in planning may be made to be a real labour saving device which is economical, within the reach of the smallest householder.

### Drawing Room.

At first sight the constituent parts of a drawing room, being floor, ceiling, walls with doors, windows and a fireplace, do not seem to offer much opportunity, nor even many alternative possibilities, but it is just in these matters that the well designed plan differs from that type of plan which just happens.

It may be that the term drawing room is felt to be one which is dying out, and that living room is a more correct



name. It is of course true that in the type of house we are considering the sitting room is no longer a room to which ladies retire after dinner whilst men stay behind to battle with the bottle. Whichever may be the name preferred it is to be understood that we are considering that other room, where there are two reception rooms, not used for dining; and here, perhaps, we get at the real meaning of living room as distinct from sitting room. This seems to be that a sitting room becomes a living room when it is the only reception room, and meals are taken therein; and when this is the practice the well designed living room, having different purposes, naturally takes different shape.

However, the room which we are describing now is the room used only for sitting in, for the conduct of social intercourse, music, reading and writing. Each of these purposes has its requirements; and the main occupation is, no doubt, that of social intercourse, carried on mainly in the winter time, and it follows naturally that the fireplace will be chosen as the spot round which the gathering will take place. This being so, it is essential that certain points must be observed in determining the situation of this feature. It must be sheltered from draught and at the same time in such a position that it affords opportunity for as many people as possible to draw in to its neighbourhood. Consequently any position in which a fireplace comes directly between a door and a window is bad because of draught and lack of privacy, the door opening right on to anyone sitting by the fire; and at the same time the revived old-fashioned ingle nook is not to be recommended, as unless it is so large as to be out of proportion with the rest of the room, it will not permit of more than a few people gathering round. Neither is there any longer the same need for the ingle that there used to be in days when

doors and windows admitted draughts of so violent a nature when closed as to render some additional shelter necessary. However, something of the feeling of the old ingle nook may be obtained and at the same time a useful purpose served by recessing the fireplace. For instance, it may be that it is convenient to situate the fireplace, on account of the necessary position of the door on the one hand, and the main window on the other, on an outside wall forming the end of the room. In such conditions a bay formation having the chimney-breast in its parallel wall and windows in its oblique walls as is shown in fig. 33, may be found a convenient disposition, enhancing the appearance of the room and at the same time giving something of the effect of the ingle nook.

Or if the proportions of the room demand it, that is to say, if the length of the room is so much greater than the breadth that it would remove the fire too much to one end of the room, in such circumstances the fireplace will be better situated on one of the long sides, where again it may be recessed. This, if the wall is an outside wall, will provide a feature externally which may be made to add to the artistic appearance, and if it is an inside wall, may be worked in side by side with the fireplace in the room next, and in both cases such an arrangement will increase the floor area by a foot or more ; and this last in a small house is a matter of great importance (see Plate I.).

To return again to the consideration of the relative position of the door, window and fireplace in the sitting room, the points governing the matter are perhaps as well illustrated in fig. 33 as they could be. The recessed fireplace, already discussed, is here shown to great advantage, and though the door must of necessity come on the same wall, the recessing of the fireplace removes it from any draught or interference with privacy which might

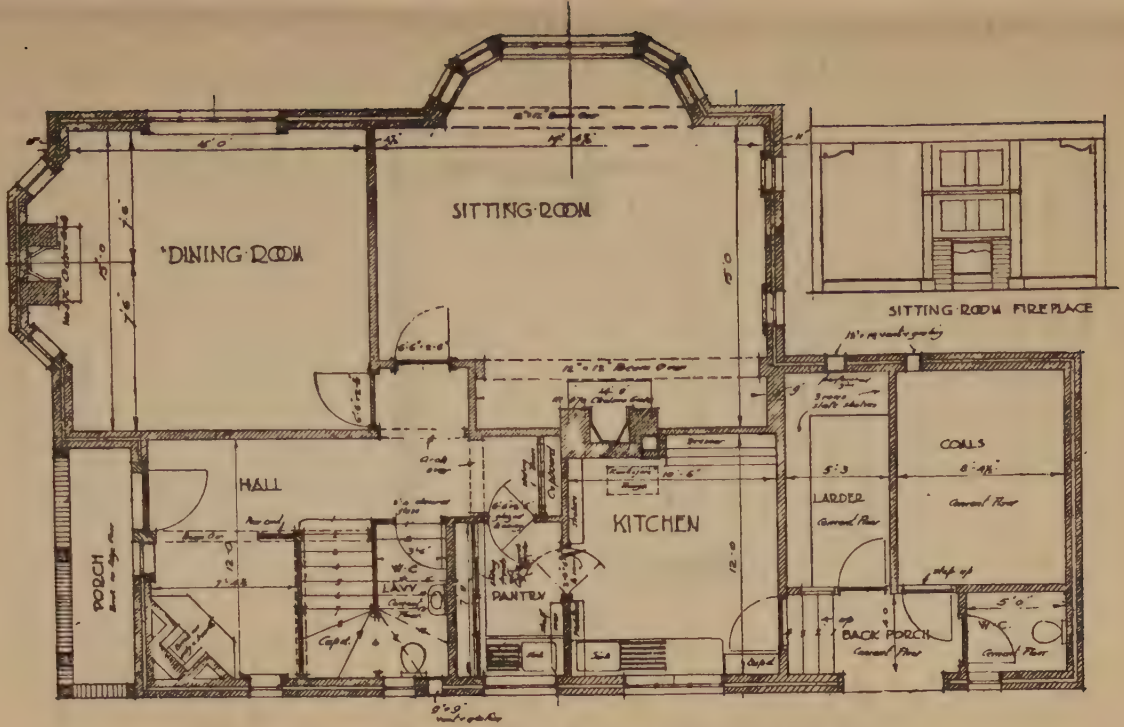



Fig. 33. Showing Plans of Dining and Sitting Rooms.

come from the door. Here, in passing, though it should not be necessary, it may be remarked that the correct way to hang a door of a living room is so that when ajar it does not permit of a through view into the room.

In the sitting room, which we are now considering, the depth of the room and the position of the fireplace might cause the recess to be dark had not the large bay window been arranged directly opposite of sufficient size to admit light enough for a room double the size. Also additional light is obtained from the two windows on the side wall,

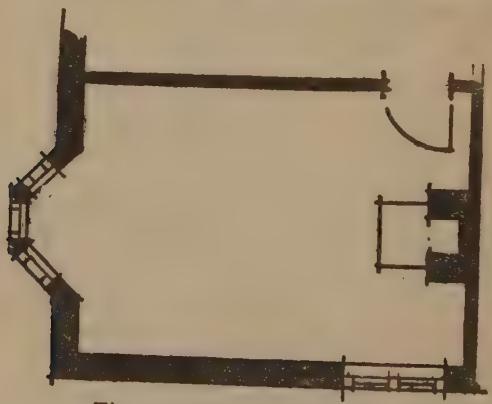


Fig. 34. Faults in Planning.

a space being left between these for a writing desk. The window nearest the fireplace recess also provides a side light convenient for persons seated round the fire. Something of the appearance of such a recessed fireplace and to what extent it may be made to resemble an ingle nook may be gathered from the elevational detail accompanying the plan (fig. 33).

It is the purpose of the present book to determine the principles underlying good planning, yet there is something to be gained from a study of fig. 34, in which most of the

faults a sitting room can have are to be seen. Here, the door opens directly on to the fireplace, and the wrong way, providing no screen when ajar. The fireplace projects out into the room, robbing floor space; it comes on the narrow wall, the room being much longer than its width. There is a window place for lighting at the side of the fire, but its position is such that it would be impossible to sit round the fire without being in the direct line from door to window. A further fault is the small bay window at the furthest point from the fireplace.

This brings us practically to the conclusion that though no room looks really right if it is a square, yet the most comfortable shape for a sitting room is that which most nearly approaches a square, having where possible one or more recesses formed in conjunction with the rooms adjoining, as shown in fig. 33.

## The Dining Room.

If one were asked the main point governing a dining room so far as the small house is concerned, one would be inclined to place, before every other consideration, the demand that it must not be less than 12 feet in its smaller dimension. The reason for this will be obvious to anyone who takes the trouble to measure a dining table with chairs on either side and then to allow space for passage way behind the chairs when in use. However, that it is necessary to point out this requisite is proved by the frequency with which a dining room under 12 feet wide is met with in small houses. Often, too, this deficiency is aggravated by the fact that the chimney breast projects out from the face of the wall and so still further robs the floor area, making any service behind the chair entirely impossible. In the narrow dining room the recessed fireplace is almost essential.

## The Serving of Food.

The main purpose of the dining room being food, it is difficult to consider it apart from the kitchen, and into this, of course, comes the service.

Obviously the kitchen and the dining room must not be far apart.

In mediaeval times, long, broad corridors and capacious halls were a proper setting for the spectacular procession of the master-cook and his assistants with the "feast." To-day the old time plan, still so often met, of interposing the hall between the dining room and the kitchen is out of date, and the most direct service from the kitchen to the eating place is more in keeping with the spirit of the times.

Obviously the most direct course to adopt is to eat as near the stove as possible, and so save carrying to and fro; in other words, in the kitchen. But until the design of the kitchen is considerably altered it may be taken that eating in the kitchen is out of the question.

In a servantless house the kitchen, where it is not used as a sitting room or dining room, may contain the sink, and the room itself need not be so large. In fact, the smaller it is, so long as it gives room for movement, the less will be the energy wasted in walking to and from larder to stove, stove to table, and to and from table to sink. Miles each day must have been walked in the old-fashioned houses. The ideal in this respect would be a stool on which one could sit with everything in reach, and some portable kitchen combinations are said to supply this in part. But for the moment, we are considering the planning of the kitchen as we know it, having regard to the saving of unnecessary work. With the sink for washing up the utensils used in cooking now installed in the kitchen,

the scullery will be unnecessary and may be dispensed with. The most convenient position for the sink is as near to the stove as possible, but in this position difficulties will probably arise in meeting the necessity for the sink to be as near as possible, if not directly, under a window. How-

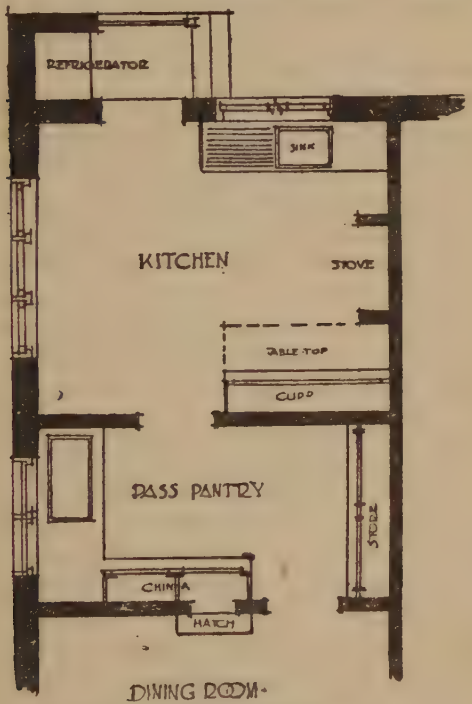



**Fig. 35. Plan of Kitchen.**

ever, with careful planning, bearing in mind that the proper position for a stove or range is one giving a left-hand light, the proximity to the sink will not be impossible of attainment.

In the old days, when considerable quantities of food

were stored, big larders were no doubt necessary; but to-day, in situations where daily delivery of groceries and milk are customary, this accommodation is no longer needed, and if only our national conservatism would give way in the matter of ice, the larder might be entirely dispensed with. In America the daily delivery of ice for the refrigerator is as much an accepted fact as the daily call of the baker and other tradesmen. The refrigerator should be installed near the tradesmen's door. In America the refrigerator is placed in the back porch or verandah; and there is no reason why a covered space should not be provided to accommodate it, as shown in fig. 35.

Another method to save walking is to instal a modern form of dresser and store combined in the kitchen, as handy to the stove as possible, and to use this in place of the store cupboard which is usually in another part of the house. This combination, as shown in fig. 36, contains, in place of the shelves for crockery, cupboards for stores, and flour bins. The table-top and the sliding extension can be used instead of a kitchen table, with the result that the area of the kitchen is reduced, and the floor space kept free.

The plan fig. 35 shows a handy arrangement of the adjuncts of the service room, with the sink under the window next to the stove, the stove left-hand lighted and the store combination next to the stove, and with two walls left free for lighting by large window spaces. Thus a light and airy service room replaces the often dark and always too large old-fashioned kitchen. And this has been achieved by allowing the plan to spring out of the practical requirements.

So far consideration has been given only to the requirements of the kitchen, and no accommodation has been made for the china and glass used in the dining room.

Still bearing in mind the disinclination for unnecessary walking, we will place the dining room no longer on the

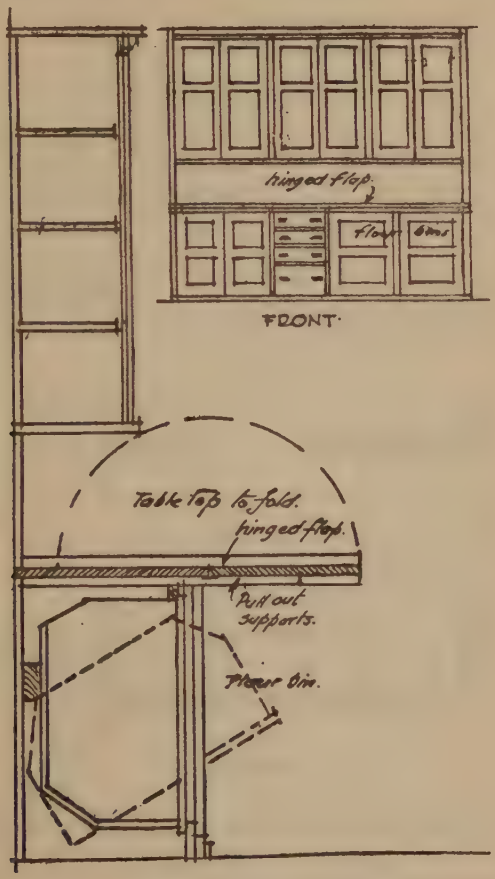



Fig. 36. Modern Dresser.

other side of the hall, but as near as possible to the room in which the meals are prepared. This, of course, would

be next to it, but there are certain objections to such a proximity. One is noise, another smell, and a third that some provision, as mentioned above, is necessary for the china and glass.

## The Pass Pantry.

A disconnecting lobby, between the kitchen and the dining room, ventilated from the outer air, and serving as a china closet, will meet these requirements. This disconnecting lobby is known in America as a pass pantry, and as the name implies, is in the nature of a passage, with storage cupboards. Here the crockery and plate used in the dining room is kept when not in use, and in a

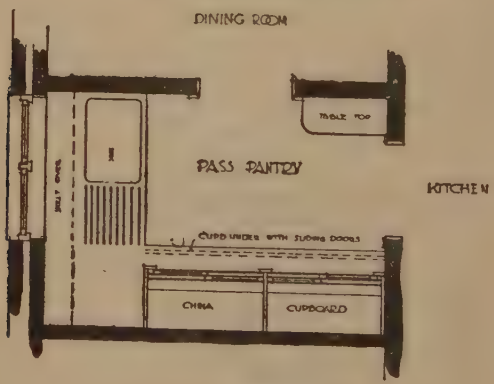



Fig. 37. Pass Pantry.

pass pantry fitted with a sink it need never pass into the kitchen at all. In fig. 37 such a sink is shown under the window, and on the left hand, easily reached by the person washing up, is a china closet, into which the articles may be directly placed after washing. When used with a service hatch into the dining room, the table may be laid

from the dining room without entering the pantry. To further facilitate the service of a meal, the pass pantry should be fitted with swing doors. These should be provided with a beaten copper kicking plate on the bottom rail so that they may be opened with the foot, and they should be arranged to close of their own accord. To the left, when passing from the kitchen to the dining room, is a table-top upon which to rest a tray during transit. This may be a hinged lift-up flap to fold downwards when not in use, and where gas is laid it may have a small stove or ring upon it.

The reduction of work achieved by the use of a pass pantry, in the preparation and laying of meals, clearing away and washing up, is very considerable when compared with that entailed by the old English type of plan, still almost invariably met with, where the kitchen is at the farthest point from the dining room and the service across the entrance hall.

## The Dining Room.

Having established the point that the dining room must not be dissociated from the kitchen as in the old-fashioned plan, and suggested as a suitable communication the pass or service pantry, there remain for consideration those plans in which expense will not permit of the extra cost involved in the provision of the pantry advised.

However, even in these the principle holds good, and the two rooms—dining room and kitchen—should be as close together as possible, and the closest they can be is side by side. In this position, to introduce something in the nature of a substitute for the pantry is desirable if possible.

## Serving Hatches.

The simplest form of service hatch is a hole in the dividing wall fitted with a sliding or hinged door, and provided with a shelf which may be fixed for folding up and down like a gate-legged table-flap.

The sliding door or doors to a service hatch may be fixed to work either up and down like a sash window, or sideways like the doors to pantry fittings. The construction of these and other such matters are detailed in a later chapter dealing with the construction of fittings; the present purpose being to give consideration to any points which affect planning.

Except that the straight through hatch saves unnecessary walking with loaded trays, it cannot be recommended owing to its interference with the privacy of a dining room when in use. The doors must then be open for a period of time during which an unimpeded view from one room to the other is permitted, and this cannot be said to add to the amenities of the dining room.

On the other hand, if a slightly increased expenditure is possible, this objection to the hatch may be overcome by forming it into a cupboard having doors on each side and projecting on brackets into both rooms. Use can then be made of it so that when one door is open the other is kept closed, and the first closed again before the other is opened.

So far as the decorative treatment of a hatch in a dining room is concerned it must be acknowledged that it is difficult; and perhaps the most satisfactory method of overcoming this difficulty is to design the hatch so that it forms part of a built-in sideboard, something after the manner shown in the accompanying figure 38, where the fitting is divided into three portions horizontal, the side

portions being ordinary sideboard or drawer fittings with shelves above either open or covered with glazed doors, and the lower portions shelves enclosed with panelled doors. The intermediate portion then becomes the hatch, which is framed in to match the side portions but having a wood panelled door rather than glass.

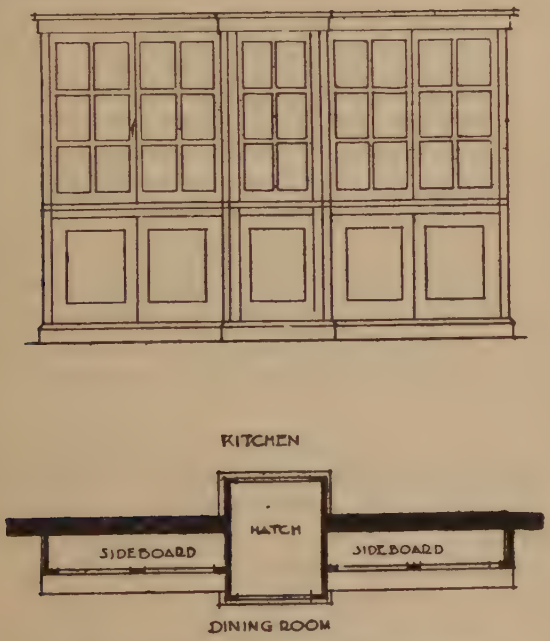



Fig. 38. Hatch and Built-in Sideboard.

However, the truth must be confessed that the hatch is but a poor substitute for the pass pantry, and the writer for one would prefer to do without it owing to the fact that however nicely it may be disposed or designed it must always act as a communication for both smell and noise.

## Plan of Dining Room.

The deciding feature of the plan of a dining room is really the position in which the carver may decide to sit. In the ideal dining room the service door and the sideboard should come behind the seat of the carver, which in a rectangular room means one of the shorter sides.

This practically decides that the fireplace must be on one of the other three walls; and as the use of the room is a place in which people are mainly occupied at a table in its centre it is obvious that the source of heat should be as near as possible to that centre position, so that it may be as nearly as possible shared equally by all. This, of course, is not possible, but it will be more nearly so if the fire is placed on a side wall than on the other end wall. The situation of the dining room with regard to the other rooms will, of course, determine on which side the fireplace shall come, as will also the aspect of view which will determine the amount of wall space which must be given to windows.

Here again is an opportunity for a recessed fireplace; as it may be so on whichever of the longer sides that it is decided to situate it. If the wall be an outside wall the result externally will be a projected chimney-stack, which may be made a feature in the elevation, as was mentioned in considering the sitting room.

## Fireplaces in General.

Here it may be stated that with regard to chimneys in general, so far as planning is concerned, it is obviously a cheaper method to group as many flues into as few stacks as possible. From the economy point of view the cheapest house would be that in which all the fireplaces

communicated with one stack. But the house in such conditions would need to be built round a central chimney ; and though this has been done the result is somewhat of a freak. Consequently the more nearly that this ideal is reached the cheaper the house will be so far as the expenditure in chimneys goes. This consideration, of course, affects the plans, as, though an outside chimney has the result already explained of saving floor area, and if on an outside wall, of lending aid to the artistic appearance externally, to place all chimneys on outside walls for these reasons would be to have as many stacks as there are fireplaces on the ground floor, which would, of course, be unnecessarily extravagant.

So that forethought in planning necessitates that grouping of fireplaces must be borne in mind as one of the restrictions governing the plan of each room.

Returning to our consideration of the dining room, we have now the door, the service end and the fireplace wall in a room, as nearly approaching a square as possible, decided upon, which leaves us two walls ; and neither are we entirely free from restrictions so far as these go, for they will be affected by these conditions of aspect which lead us in the first place to plan the dining room in the position that we find it.

The effect of aspect on the dining room is again arrived at from a consideration of the purpose of the room. This is, of course, to feed in two or at most three times a day, generally so far as the owner of the small house is concerned only twice, except on Sundays. The two meals are breakfast and dinner ; and with regard to dinner, during one half of the year it will be taken after the sun has set, whilst during summer a cool room after the heat of the day will be most acceptable. As a result, therefore, it is for breakfast all the year round that we shall look for the

sunshine whenever it is to be obtained. Consequently, given a satisfactory view and the planning of the rest of the house making it possible, the ideal main aspect for a dining room is easterly with supplementary windows on the southern wall.

## Chapter VIII.

## Verandahs.

Meaning of Name—Raised Verandahs—Roofing to Verandahs—Verandah Supports—Protected Verandahs.

THIS in conjunction with the sitting room brings us to the consideration of verandahs. For if a dining room is faced so that its windows look east and south, it may well be that the main windows of the sitting room face south also ; and if these two rooms come either side by side, or at a distance not far from each other, a verandah situated on the south wall may be used to serve both rooms alike. In this sheltered position it will be useful not only as a sitting-out space but also, if built large enough, for an out-door dining-place in summer-time.

Here it might be well to clear up some of the uncertainty which exists owing to carelessness in naming things, as to what a verandah is and wherein it differs from a balcony. Both names are used indiscriminately for either, as are also the terms loggia and porch, though these latter perhaps to a less extent.

### Meaning of Name.

The word verandah, or veranda, is itself comparatively modern in English, not being in general use before the early nineteenth century. But it was known much earlier in India, and in modern Hindustani appears as *verand*, and

in Malayan as *baranda*. Yet it is of European origin, being found as early as the fifteenth and sixteenth centuries in Spanish and Portuguese, and apparently is derived from the Latin *vara*, a forked pole or rod.

Arriving out of this the important point is that though it was probably taken by the early Portuguese navigators to the East, it was from the East that it was brought to England, at a time when many persons were returning home from service in India. It was thus natural that such persons should introduce into their homes in England not only the features to which they had grown accustomed, but also the names by which these features had been known to them abroad. Among these was the verandah, and, as their houses in India had been of the bungalow type, which is really a house built on one floor only, it follows that the verandah must have been on the ground floor. In consequence it is clear that the application of the name verandah to any part of a building in any other portion must be inaccurate.

Balcony is derived from the Italian word *balcone* from *balca*, a scaffold, and therefore clearly defines a platform projecting from a building and supported by either poles, posts, columns or brackets.

The word porch or portico, being derived from the Latin *porticus*, properly describes a portion of a building giving entrance to that building, and having a roof carried on columns. It may consist of a small space, or it may be the entire front of the building, as in the classic temple; but, by origin, it is properly used only in description of that part of a building used as an entrance, the term *porticus* being used to distinguish the entrance of a temple from the inner portion known as the *porticum*.

Consequently the *verandah* is properly defined as a portion of a building having a prepared floor and covered

by a roof which may be flat or pitched, or by an overhanging upper storey, and the portion above supported by posts or columns in such a manner that one or more sides of the roofed in space are open to the outside air.

The last referred to overhanging upper storey, may be occasioned by the use of a long sloping roof being carried out beyond the outer walls of the rooms on the ground floor, primarily to give a greater floor area to the rooms

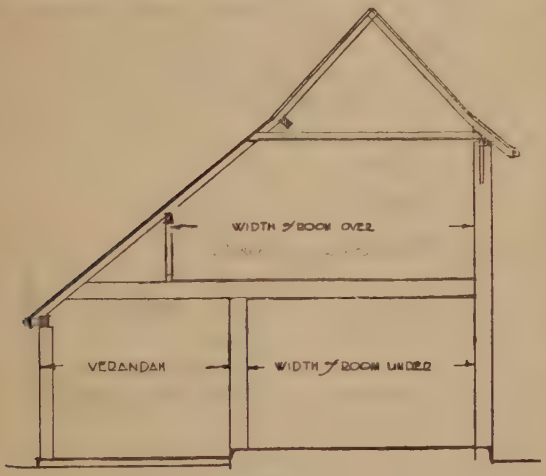



Fig. 39.

above, and it is by the continuation of this roof down to the level of the tops of the ground floor windows that the verandah covering is provided.

In the same way a room may be boldly projected out over a space below and roofed at the same level as the other upstairs rooms, the ceiling of the verandah then being formed by the underside of the joists of the floor of the room above.

Or, alternatively, additional floor space may be gained

in an upstairs room by projecting a gable out over a bay window; and in this case the projection may be made to work in with that over the verandah, and a door or French window be formed in one side of the bay, thus enabling the verandah to be used from both rooms.

The various types of verandahs just suggested supply very good examples of good design which springs out of the constructive needs of the building, and in consequence they supply a reasonable and natural effect, always more happy than any projection applied externally as if in after thought, and quite apart from the construction of the main building. To decide at once whether the verandah

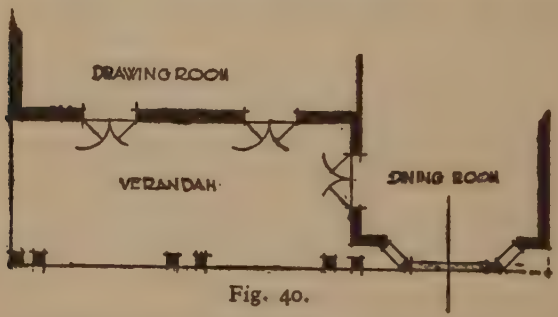


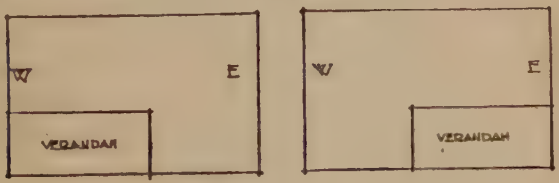

Fig. 40.

belongs to the first or second of these classes it is necessary only to consider if either could stand apart from the other without this mutual structural support. If not, then the verandah is structural, but if so, it is applied, and therefore not good design.

The position of the verandah will depend not only upon the plan of the building of which it forms a part, but also upon the tastes of the persons making use of it. By some it may be required as a sitting out place only, whilst others will also desire to use it as an addition to the dining room in summer. It may be that some prefer the sun in

winter, whilst others look upon the verandah as a place providing shade in summer. All of which matters will determine the aspect and position with regard to the walls of the house.

As will be felt, no doubt, the most accommodating verandah will be one which will lend itself to most of these requirements, and to which access may be gained from both dining and sitting rooms. It is of course difficult where a verandah is wanted for both a shady place in summer and a warm sun-trap in winter, as the two requirements at first sight appear opposite. However, that these may be gained by projecting either the sitting room or dining room, and so providing a sheltering wall either to




Figs. 41 and 42.

the east or to the west is to be gathered from figs. 41 and 42. Fig. 41 showing a verandah exposed to the south and west, and fig. 42 one exposed to the south and east; both if required giving shelter from the sun when it is at its highest at midday in summer-time. In fig. 40 is shown an ideal position for a verandah which it is desired to use for breakfasting out of doors in summer, as is a frequent practice in America, and as has been pointed out this position has the additional advantage of giving shade in the evening, and in consequence a cool place for dining out of doors in summer.

It will be clear that in all these matters, as indeed in all planning of the small house, it is much a matter of give

and take ; but one thing can be definitely stated, and this is that a verandah should never face north. This seems rather an obvious thing to say, and were it not so often seen should be unnecessary.

## Raised Verandahs.

Where, as in America, the ground floor is raised a few feet above the ground line upon a basement or semi-basement, the verandah, coming also at the same height above the ground will need steps to reach it, and should also have a handrail with balusters run round between the columns or posts. In this connection it is important to notice that whereas all verandah floors should be sloped outwards, the bottom rail carrying the baluster feet should be raised at least 2 in. from the floor level to facilitate the passage of rain water, and for sweeping purposes. A cornice should be run round the verandah floor and the top member of this hollowed to form a rain water gutter.

If the verandah floor is of wood, as it will most likely be if raised as stated, when the joists of the flooring are matched, they should be painted with thick white lead and oil just before the floor is laid. When double flooring is laid the upper flooring should be open-jointed, the boards having square edges and being set about three-sixteenths inch apart, the nails being driven from the top. When the sides of the verandah are enclosed in solid walls a narrow slip should be run round the outside edge of the floor having a groove worked in it to form a gutter. This gutter should be sloped and have holes in it for the discharge of the water.

Verandah floors having a lead or zinc covering should be provided with movable flooring consisting of duck-boards formed of battens and cleats. The slats should be

4 in. square laid ¼ in. apart and nailed to one and three-eighths cleats, which should be blocked up from the roof covering and laid loose, and left in sections of a convenient size for moving.

## Roofing to Verandahs.

As has been said, the roofs to verandahs should wherever possible arise out of the construction. Where this is impossible they may require a flat roof which will provide

Fig. 43.

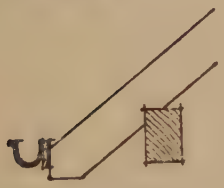


Fig. 44.

Fig. 45.

a balcony above. In other cases a separate roof, either lean-to or hipped will be necessary.

To form the latter a beam is run over the heads of the supporting posts or columns and rafters are notched over it or birdsmouthed down on to it, run from a wall plate nailed to fixing blocks or breeze bricks in the face of the main wall. When the rafters are notched over the beam and these ends extended outwards from the beam the feet should be cut splayed, having the bottom splay

parallel with the horizontal and the upper splay vertical. To this vertical face is nailed a gutter board or fascia, and to this again is screwed the rain water gutter. When a boxed-in cornice is desired a soffit should be fixed to the bottom of the rafter feet and over this mouldings may be planted to give a panel effect. The panel styles should be worked so as to come opposite the posts or columns, and as often intermediately as desired.

An alternative finish for the rafter feet is to birdsmouth them down on to the top inner corner of the beam and to nail the thin upper surface a *sprocket piece* to the bottom end of which the gutter board and soffit may be affixed as before described.

In forming flat roofs to verandahs the cheapest method is to run the floor joists out over the verandah. But as, in order to give a good appearance externally, the beam over the verandah posts will have been kept at the height of the tops of the ground floor windows, studs will have to be framed up from the beam to carry a higher plate on which the feet of the rafters may rest.

## Verandah Supports.

*Square Posts.* The supports to verandah roofs may be either square posts or turned columns, and these either in wood, brick or stone. Cast iron columns are used, but are rather suggestive of fire escape construction and as such are out of place on the small house.

If square posts in wood are decided upon, the main essential to their good proportion is that they should not be too slender. In this respect offence is more often met with than not; posts 3 in. square and 7 feet high are by no means unusual.

Whereas in the Classic Orders, which so many look

upon as the guide to all designs, the columns including cap and base vary from 7 diameters in height in the Tuscan order to 10 in the Corinthian. Which is to say that the equivalent for a 3 in. square post of which the diameter is 4¼ inches the height would be 2 ft. 5¾ in. in the Tuscan style and 3 ft. 6½ in. in the Corinthian. And whilst of course it is not claimed that because the Classic orders had certain proportions that all work ever afterwards should have the same, yet if from 7 to 10 diameters in height looked well at one time, there is no reason to suppose that it should not do so now. Consequently for a square post when 7 ft. in height to compare with the Corinthian order it should have a diagonal of 8 in. that is a square of 6 in., and with the Tuscan a diagonal of 12 in. or a square of 8½ in. In proof of this a well designed porch is shown in fig. 60. Here the posts are 9 in. square and for some reason or other they look just right. The fact that in this case they appear to be carrying a heavy load may have something to do with this, and that if they had only been supporting a slender roof they might have looked too heavy may be true, but in any case to imagine 3 in. square posts in their place is to picture supports altogether inadequate.

Posts of this size are not always obtainable in the solid or if obtainable are very likely to crack owing to their not being thoroughly seasoned at the centre. Consequently they are often built up boxes with cast iron columns as a core. Neither is the difficulty of subsequent contraction due to lack of seasoning to be entirely done away by this means. Ordinary square butted joints, as shown in fig. 48, whilst being the cheapest are also the worst for opening. Mitred joints, as shown in fig. 47 are better, especially if provided with a feather. But perhaps the best thing of all to do is to recognise that shrinkage will take place and to

allow for it in the nature of the joint by using a form of rebate and staff bead joint, as shown in fig. 49. Here as may be seen the bead is formed to throw a shadow either way, and the board on which it is formed being rebated into the other board, when shrinkage occurs the only apparent result is that a wider space appears on one side of the bead, which at a distance looks like shadow.

In this way also panelled posts may be formed which have the effect of communicating lightness to posts of stout dimensions. On solid posts also mouldings may be planted on to form panels to the same end.

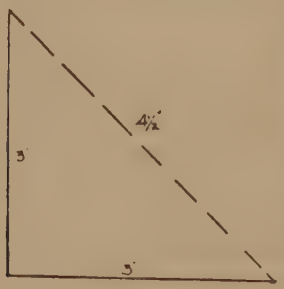



Fig. 46

Fig. 47.

Fig. 48.

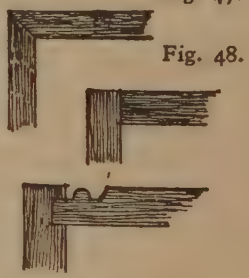


Fig. 49.

Another fault more frequently met with than not with regard to verandah posts is that they are let into a hole in the floor of the verandah. This is a mistake and has only to be tried once: for however good the setting of the foot of the post, in time it will work loose when rain water will collect round the foot, and drying in by evaporation, soon rot the post. Verandah posts should either be rested on the floor surface when they should have a lead pad between the floor and the foot, and this pad should be turned up for at least 1 in. and copper nailed, or better still they should be raised on bases of brick or concrete. These

bases, if larger than the post, should have their top surface bevelled to throw off the rain water. To ensure stability the feet of all posts should have a cast iron dowel let in to them and down into the floor on which they stand.

*Verandah Posts Angle Brackets.* As stiffeners to the posts and beams angle brackets are inserted. These are of designs varying from 1 in. boarding cut to shape to suit the design, to shaped solid knees of the same dimensions as the posts. The latter is an effective form as it is expressive of the purpose for which it is employed; but it is expensive on account of the large dimensions of the timber required for cutting it from. A splayed tenon should be left on the upper and lower faces to fit into mortises in the beam and post. These tenons may then be pegged with heart of oak pegs, and for appearance sake the pegs may be left to project ½ in. from the face of the post and beam.

## Protected Verandahs.

For the purpose of additional shelter and for use in winter as a sun parlour, glazed screens may be fitted to verandahs. These should be hinged in such a manner that they may be folded back or entirely removed in summer. Where divided into panes with bars the size of the panes should be the same as to the windows.

In place of screws or brackets trellis work may be fitted as a permanent fixture as it is of varying design. They serve as a partial shelter and a useful ground for tying climbing roses to.

## Chapter IX.

## Bedrooms.

Planning a Bedroom—Doing away with Wardrobes—Windows to Bedrooms—Passages—The Bathroom—The Linen Cupboard—Clothes Chutes—Medicine Cupboard.

THE ideal bedroom, being a place for sleeping in, should be large, airy, and above all restful.

Whilst in a small house to obtain any room that is large may be difficult, there is a great deal to be done by good planning, even in a small room, to give that effect. For instance, it will be obvious that by defective planning one may be forced to place the bed in such a position that coming centrally it appears to occupy most of the room, and seen from the bed all the walls and furniture seem to be close at hand. Whereas if the room is so planned that the bed may be most conveniently placed to one side a greater unoccupied floor area will be left, and a consequent feeling of "roominess" gained, though the actual area is the same.

It may be taken always as a guiding principle in planning a bedroom that the bed should not come in a direct line between door and window, nor should the door open directly upon the bed so that the bed may be seen from the passage or landing when the door is ajar, neither should the foot of the bed face the window as the light coming to a person in that position does not conduce to restfulness. And whilst a good way has been travelled in

design since it was customary to place the bed in a bunk in the wall, an approximation to that idea has much to commend it. But there will be many features already fixed by the lay-out already planned for the downstairs rooms that will restrict the possibilities for the bedroom. The stairs will have been decided upon, thus fixing the position of the landing ; and with regard to this, as it has an effect upon the bedrooms, it should be noted that long passages should be avoided, as in a small house they are wasted space. This will have the result of causing the doors of all the bedrooms to be so planned that they open

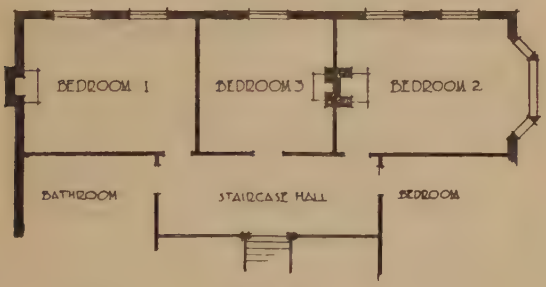



Fig. 50.

as close together as possible on to one landing of a restricted area. This, obviously, must come centrally ; and as a result the doors of the bedrooms will be thereby fixed at the corners of the bedrooms. Even in a larger house, where the landing partakes of the nature of an upper hall or a corridor, the doors of the bedrooms should be placed as near to the stairs as possible, as is shown in fig. 50. This figure also affords illustration of how the designer has allowed himself to be forced by the restrictions of his plan to leave only one position, in the room marked 2, for the bed, and that, the bad one facing the windows ;

whereas in the room marked 1 there are alternative positions, but in this instance that which is best with regard to the window is the worst with regard to the door in that it comes in the direct line between them.

The plan of the upper floor of the house at Weston-super-Mare (fig. 51) shows an example of a house, though of a "spread out" rather than a "boxy" nature, in which the furthest doors of the bedrooms are no further apart than half the width of the house. But the next plan

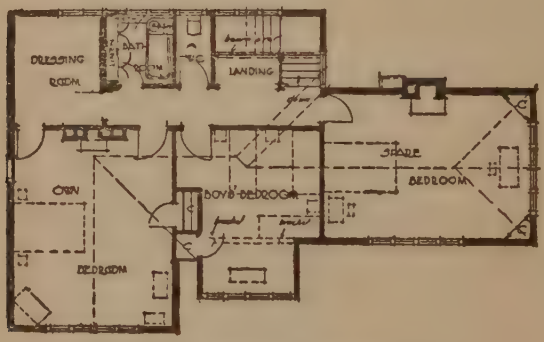



Fig. 51. House in Weston-super-Mare.

(fig. 52), that of the house in Victoria, B.C., is an even better example of the grouping of the bedroom doors. In this last, if the study and dressing-room had not been interposed to meet the special requirements of the client, and a bedroom had occupied the space of these two rooms as originally designed, no bedroom door would have been at a greater distance than 10 ft. from any other, and the amount of floor space given up to the upper hall is as small as it could conveniently be.

In these two plans the positions for the beds in the

main bedrooms should be studied. In those marked "spare" and "own" bedrooms in the Weston-super-Mare house the planning is as near perfection as it could be. As will be seen in both rooms a side light from a window is provided for the bed, and the bed is in such a position that it is sheltered from view when the door is ajar. In each

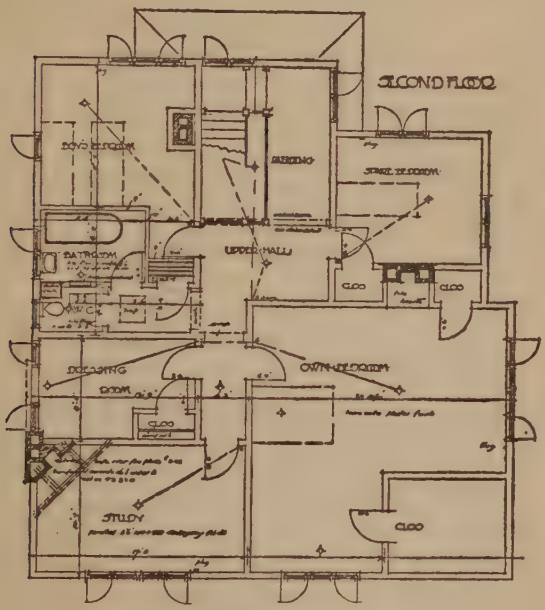



**Fig. 52. House in Victoria, B.C.**

instance also, though double beds are indicated, considerable floor area remains for the other furniture and also space unoccupied by any furniture. The windows on two walls are a feature which conduce to the sufficient airing of the bedroom which is fast becoming recognised as an essential requisite for good health.

## Doing Away with Wardrobes.

Much is heard in modern times of labour-saving expedients, yet we still cling to our old-fashioned wardrobe, though it is one of the most costly articles that we have to purchase in furnishing, and in moving it is the most unwieldy; whereas most of the labour-saving contrivances are ridiculous so far as concerns the owner of the small house in that they are so much in excess of his pocket as is a Rolls-Royce. Yet in the saving of the wardrobe good planning may effect real saving, both financial and of labour. A glance at both the plans last mentioned will furnish examples of this in most of the bedrooms, and in particular in that marked "own bedroom" in the house in Victoria the closet wardrobe is to be seen at its best.

Here, the house being constructed of timber framing, the formation of cupboards in the walls is rendered easier, and the only brickwork being the chimney-stacks the opportunity is taken to recess the fireplace as shown and to thickness out the partition dividing "own bedroom" from "spare bedroom" sufficiently to provide two cupboards, one to each room. In the opposite corner of "own bedroom" will also be seen a still larger cupboard, which may seem at first sight unnecessarily large until the elevation is visualised. This, however, is explained when it is stated that the roof here sloped down over this to the first floor level and rendered the space useful only for cupboard room.

Another example of these "two way" cupboards is to be seen between the "boys' bedroom" and "own bedroom" in the Weston house, where again the formation of the roof is taken advantage of for this purpose.

These are examples of economy in planning and at the

same time the gain of convenience. This it is to plan well, for anyone can be economical at the expense of convenience.

## Windows to Bedrooms.

The windows to bedrooms should extend to as near the ceiling as can conveniently be to allow of room for the curtain rod to be fixed just over the window and under the ceiling.

Here may be a convenient place to combat another popular prejudice. It is that high rooms must necessarily be airy whilst low ones are correspondingly stuffy. The idea is wrong in that it is contrary to science as applied to ventilation. That rooms too low for their length and breadth may convey a depressing sensation to many is not disputed; but this is nevertheless to a large extent a matter of self-suggestion.

For it is a scientific fact which is the basis of all ventilation schemes that warmed air rises to the top of any receptacle or chamber in which it is confined. No prejudice nor self-suggestion can alter natural laws. This being so, warmed air in a room will rise as in any other cases. Consequently the warm air rising will take with it the used and vitiated air to the ceiling where, unless an outlet is provided for it, it will collect and remain until growing cool it will sink again with the result that a constant revolution will be taking place in which the vitiated air will be constantly returning for re-use.

To gain a clearer idea of this the two following figures (53 and 54) will be helpful, as showing in the first the air circulating in a high room, having a space commonly accepted as "light and airy," above the top of the window, and in the second the window top is practically level with

the ceiling line. In the first the cold air from the open window will sink, dragging with it the cooling vitiated air

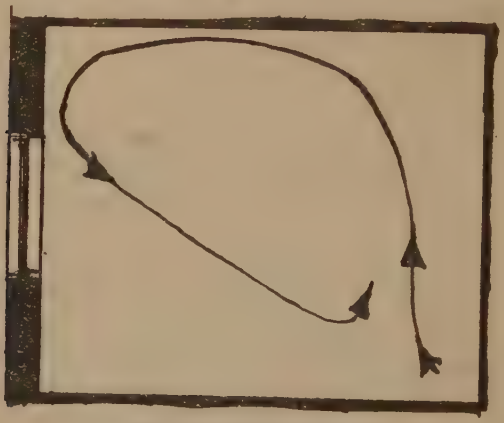


Fig. 53. High Room.

Fig. 54. Low Room.

which has collected above it; whereas in the second the only opportunity afforded for the warmed air to rise any

further than the ceiling line is through the top of the opened window which as has been said is at ceiling level.

Consequently, provided that the window is made to open at the top, and it is opened, the height of a room is not the deciding factor in good ventilation; and in a bedroom, where at least one third of the life of the majority of mankind is spent, the matter is one of vital importance.

In bedrooms the window sill will not require to be kept so low as in the reception rooms downstairs, and as broad windows, wider than tall, will contribute to the artistic effect both internally and externally, this fact will assist in such a proportion being obtained.

For purposes of gaining a side light to a dressing-table, always a helpful consideration and an essential for comfortable shaving, a window or two windows having a brick pier between will be a wise provision. This will also prevent that feeling of "seeing the inside works" contributed by the unsightly, unpolished back of the looking-glass peeping out through the bedroom window as is so often to be seen.

Lighting to the bed is always of importance, and especially so when one is ill. To this matter what has already been said with regard to the relative positions of bed, door and window has reference; and also where the artificial lighting for use at night is left to the designer of the house to arrange, this should receive careful consideration. With electric light the two-way switch enables the light over the bed to be turned out from the bed, and even with oil there are now to be obtained lamps which can be suspended at a convenient point over the head of the bed so that the light is reflected directly upon a book held by a person in bed.

Whilst it is unlikely that washstands will ever depart entirely from the bedroom of the small house, yet if the

funds can be stretched to permit of a fixed basin with running water in one bedroom the amenities of life will be greatly increased thereby.

## Passages.

It is in passages that much money may be wasted in the small house. On the ground floor, with the exception of the staircase hall, there should be no space not occupied

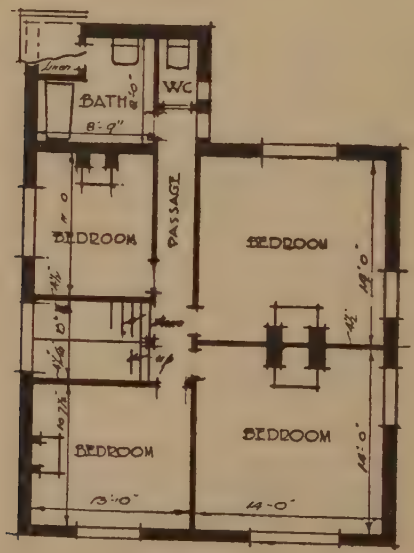



Fig. 55. A Long Passage Unnecessary.

by a room ; and upstairs passage space should be reduced to a minimum. For a passage serves only as a means of communication from one room to another, and entails additional lathing and plastering as will be obvious from comparing the two conditions ; first, when two rooms are divided by a passage, making two walls necessary, and

second, when one partition serves to divide two rooms which adjoin. Plastering costs 2s. 4d. per yard super, and as every penny counts in the small house it is therefore

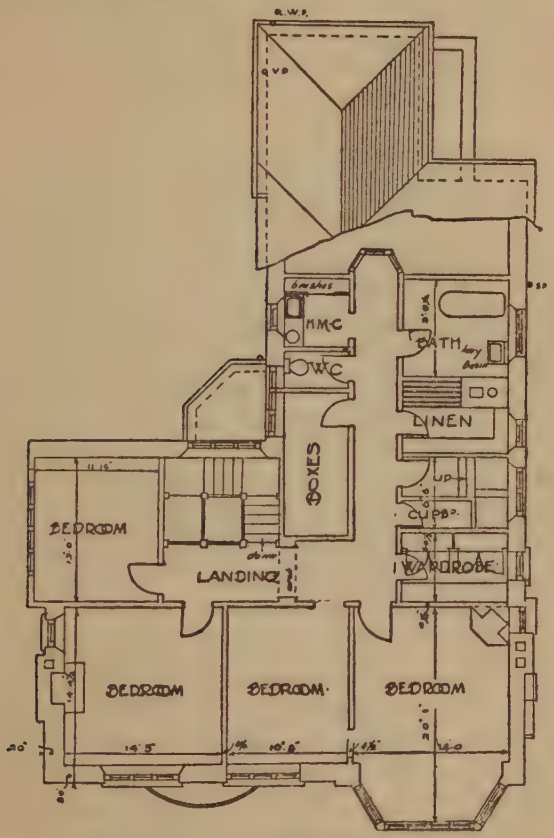



Fig. 56. A Very Wasteful Plan.

obvious that good planning must aim at the elimination of the passage.

It will not require very exhaustive research to discover

houses of even the smallest class in which a long passage leads to a W.C. at its end. Passages are even found which lead only to a window, which is the extreme of feebleness in planning. Reference again to the plans of the two houses last illustrated in Weston-super-Mare and Victoria, B.C. (figs. 51 and 52) will show how bathrooms and W.C.'s may be planned centrally and economically of space.

## The Bathroom.

So, as in a large house the ideal bathroom treatment is to apportion one bathroom to each main bedroom, in the small house the bathroom should be as handy to the best bedroom as may be; and whilst in the large house the bathrooms will communicate direct to the bedrooms this is not recommended in the small house where there is only one. The plan in such a case has obvious disadvantages. Neither is the plan often seen in America of having the W.C. in the bathroom acceptable to the English household, though it often enables very considerable difficulties in planning to be more readily overcome. It is again a saving of plastering.

The size of the space which can be afforded for the bathroom in a small house will often be a difficult matter, and in this every possible expedient will have to be resorted to. One thing however is certain; and this is that the 4 ft. 6 in. width out of which a space occupied by the bath has to be taken, as is often seen in small houses, particularly in housing schemes, is not sufficient and ought not to be allowed. It is impossible to dress conveniently in such unless one is to stand in the bath or with one leg in and the other out. A space at least 6 ft. square should be attempted; and as often the linen cupboard will lead

off from this and the doors open into it, even this will scarcely give comfortable accommodation.

A hand basin is always an additional amenity in the bathroom ; and space may be saved by fixing this over the foot of the bath, as in fig. 57. For this purpose a folding tip-up basin of the type used in cabins on board ship is a labour and space saving device : and if fitted with swivel

Fig. 57.

taps one set of taps may be made to serve both basin and bath.

The position of the bathroom, whilst, as has been said, being affected by the requirement that it should be adjoining the best bedroom, will also be concerned with economy in plumbing. To this end the bathroom should also be as nearly vertically above the kitchen boiler as possible, thus saving piping and fuel, for it is easy to see that long lengths of piping have to be paid for and cause a waste of heat energy.

In the floor plans of the Weston house is shown in figs. 51 and 59 how both these requirements may be met, for here, whilst the bathroom adjoins the best bedroom, it is at the same time almost vertically above the kitchen range and could have been actually above if the bath had been placed on the other wall of the bathroom.

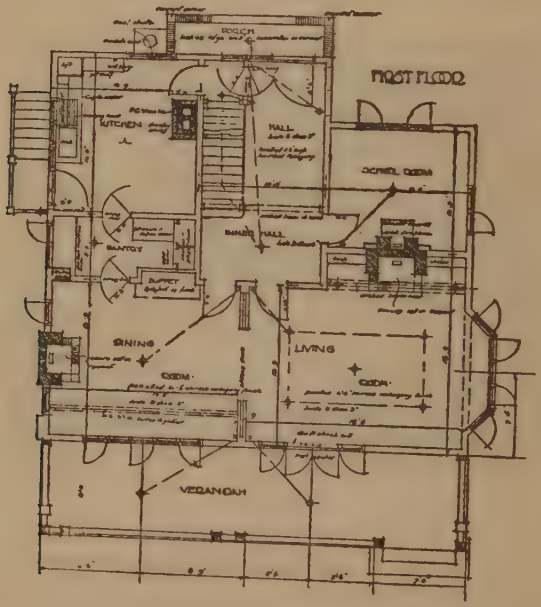



Fig. 58. A Compact Plan.

## The Linen Cupboard.

This should, of course, always be a hot cupboard and contain the hot water cylinder, or, if not, at least a coil of hot water piping; and for that reason it is generally found in the bathroom. That it should adjoin the bathroom is, of course, beyond dispute; but that its door should open

into the bathroom is not so readily conceded. For the purpose of a hot cupboard is to keep the linen aired, which means dry, and to subject it to steam every time a hot bath is taken would not seem the best way to do this. It may be claimed that the door or doors of the hot cupboard would be kept closed during such a time, which is true, but if the linen cupboard has been properly constructed, closing the door will not seal it. For, to be effective, linen cupboards should always be provided with some form of ventilator to the outer air, and as this is

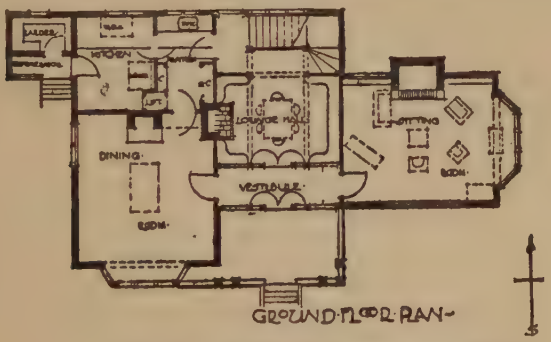



Fig. 59. House at Weston-super-Mare.

generally placed in the upper panels of the doors it will be clear that the steam will find entrance by that means.

A better position for the linen cupboard is to be seen in the plan of the house at Victoria (fig. 52), where access is gained from the short passage leading to the bathroom, and at the same time it is conveniently handy for the hot water cylinder to be contained therein.

## Clothes Chutes.

In this plan also in the partition between the bathroom and the W.C. is to be seen an American convenience in the

form of a clothes chute. This is a zinc-lined duct leading down through the pantry below and into the laundry below that in the basement, where it terminates just above the washing tub. By this means soiled linen may be most readily disposed of and find its way to the wash tubs without any further trouble than is involved in allowing it to drop down the chute.

## Medicine Cupboard.

In every house, however small, there should be a place where ordinary drugs and medicinal requirements are to be found; and how this may be conveniently achieved in the thickness of the partition may be seen by a glance at the Victoria house bathroom, where it will be found next the clothes chute.

## Chapter X.

## Windows—Sash or Casement?

Well Proportioned Windows—Division of Windows—Window Openings—Casements and Shutters—Screens to Windows.

THIS is often a very vexed question, especially when there is an architect who takes his work very seriously, as of course all good architects should. It may then be that the architect, on account of his training, feels that a certain type of house is called for by the surroundings, and that one class of window, and one only, is the proper requisite for that type. But unfortunately for his freedom there is also the client or building owner, who, very rightly, considers that his taste, he paying, should be the deciding factor. So that whilst the architect wishes for casement windows, as in most instances he will, except perhaps in a Georgian or a Classic building, on the other hand the client plumps for sash windows every time, and sheet glass with no bars at that.

"We are going to live inside our house, not outside," he will oppose to every argument, "and we want to see the view from our rooms," he will add as a final veto against bars or even lead divisions.

On the face of it, the client's claim is sound. If it is his custom to spend his time indoors looking out at the view, and if bars do impede his vision, he is right to object

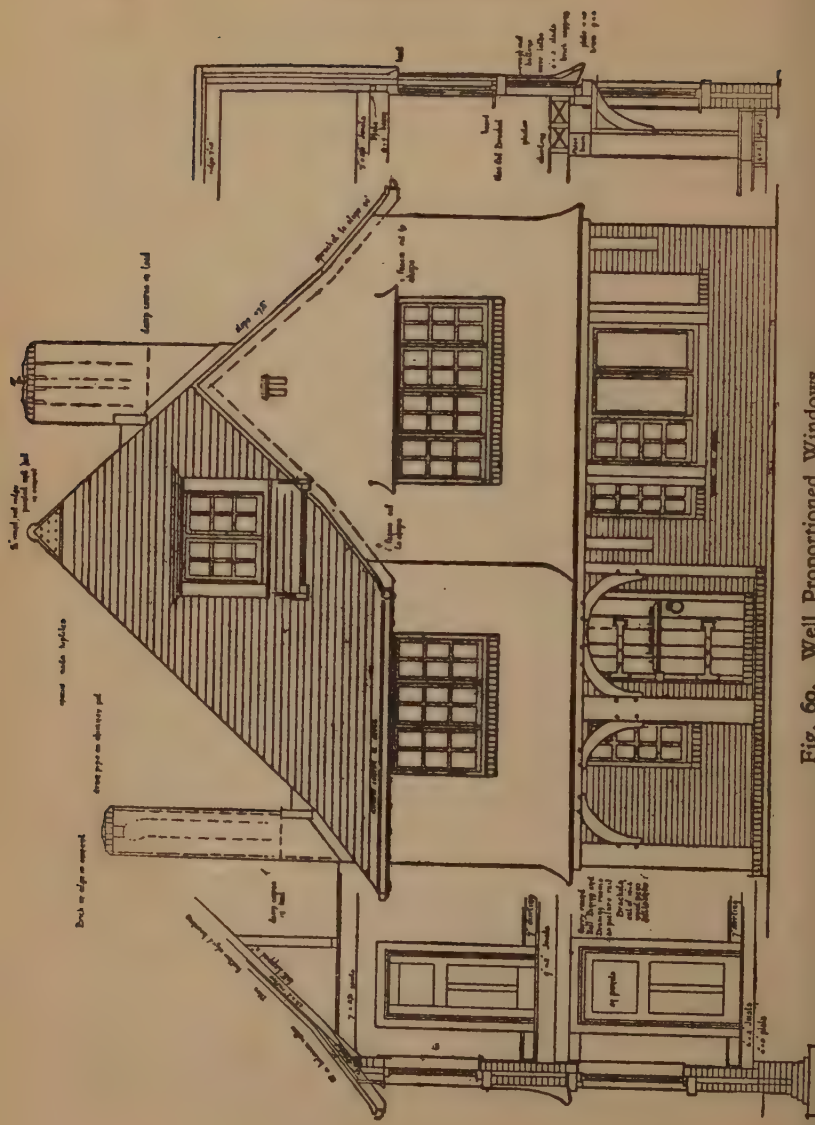


Fig. 60. Well Proportioned Windows.

to such interference. However, it would be interesting for anyone, staying say for a week, with any ordinary family not newly come to a district, to jot down the number of hours all the members of that family spent during that time looking at the view from within any of the rooms. Would it be hours or only minutes, or even a minute? In fact, does one ever look at views when a window is closed. Does one even look at the pictures one takes so much trouble in hanging, after one has grown accustomed to them? There is a great deal in custom; and it might be not altogether wide of the fact to suggest that we very rarely notice our pictures at all until some one of them is removed for any reason. We notice the blank then.

Consequently, though at first we might feel that bars impeded the views, even agreeing that we do look at views from within, use will go a long way to accustom us to seeing it through bars and in not being even aware that the bars are there.

There is also another aspect to the subject. It is the exception rather than the rule to build nowadays out of sight of any other house. Also there can be no doubt that, from outside, properly proportioned windows, split up with bars, do improve the appearance of a house. Therefore, if both neighbours dislike bars to their windows, neither will have the satisfaction of feeling that he has improved the view for the other, however much he may feel that his own view has been improved, even if he is entirely convinced of that when this view includes his neighbour's bar-less windowed house.

In the opinion of the writer this matter, whilst certainly being one of taste, is also one into which prejudice enters to a great extent. This is so from both points of view; as has been suggested, it is open to doubt if the bars are seen by an accustomed inmate; and it may also be won-

dered to what extent the bars affect the general design of a house when seen from a distance.

Nevertheless the writer can only state his personal predilection in place of all the foregoing logical reasoning, and it is for bars, every time, wherever possible, whether the windows are casement or lifting sash ; and as a proof of his whole-heartedness in this it may be added that bars were used in houses built for the writer to live in himself.

As has been said, the sash window being for some reason of a more formal nature than the casement, it follows that to preserve the general tone of the building sash windows only are artistically correct in houses of a Georgian or Classic style. For example, casement windows would somehow not look right in a house of a severe style built of stone to the design we are accustomed to find in, say, the Cotswold district. It may be that the surrounding walls having quoins, string course, cills, and sometimes arch moulds give a sensation of heaviness which renders the woodwork of the casement too slight in appearance. The fact that sash-framed windows look best in such work when they are set in outside reveals, showing then by a greater width of woodwork, would seem to supply a further proof of this view.

## Division of Windows.

But whatever windows choice falls upon, whether sash or casement, with or without bars, there can be no doubt that not only with regard to the wall spaces, but also so far as concerns their own subdivision, their proportion is a matter of the utmost importance. In fact, no matter how well proportioned the walls and roof may be, ill-proportioned windows will upset the balance and spoil the appearance of any building.

To lay down any actual rules in this matter would be difficult. Incidentally this may be the reason why so many ill-proportioned buildings are met with. The designers having been instructed by rules applying to ancient buildings have endeavoured to apply those rules rather than the principles underlying them to their buildings, designed to meet modern needs.

Proportion cannot be learned from rules. It is a matter of feeling the appropriateness of things. Nevertheless, so far as the proportions of windows and their subdivisions is concerned there is a rule which has a

Fig. 61.

general application. This is that all windows should bear a relation to the smallest subdivision thereof, and the division itself should have a greater height than breadth. This is to say whether a single window is subdivided into panes or not, it should be formed of a size such that if it were so subdivided it would contain one or a multiple of panes having a greater height than breadth. So, also, if a composite window formed of sashes of differing widths be desired, each component part should be a multiple of the smallest subdivision. That is to say that if for the purpose of appearance or any other it is desired to form a window

composed of, say, three sashes in width, each of those sashes should be a multiple part of the largest. For instance, in fig. 62 is shown a window of three sashes in width, the outer sash being one pane in width and the middle sash

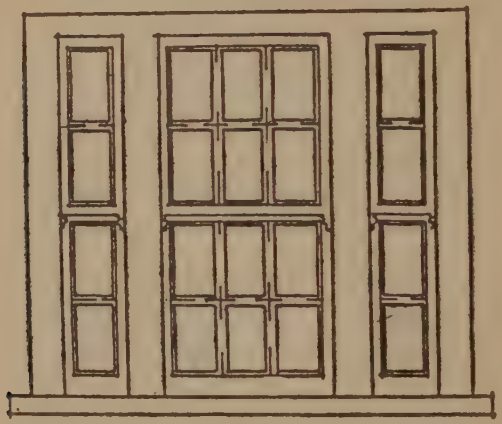


Fig. 62.

being divisible into three panes each of a size equal to the panes of the outer sash. So it should be with composite windows of any form, some additional examples of which are shown in fig. 63.

Whilst upon the subject of the division of windows in

Fig. 63.

panes, a small detail but one which has a very considerable effect upon the correct appearance of the building may be noted. In the examples of classic work, so much recommended to students, it will be found that the entablature, when drawn out and seen at a glance as a whole with the columns bare, the upper parts will often look heavy and out of proportion with those that support them. This,

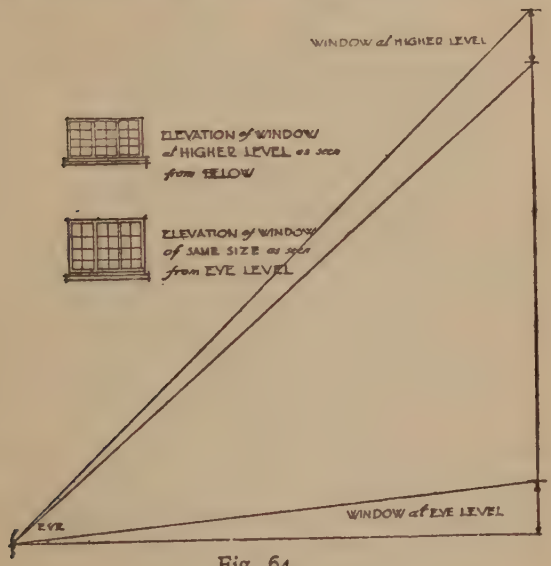

WINDOW of HIGHER LEVEL
ELEVATION of WINDOW of HIGHER LEVEL as seen from BELOW
ELEVATION of WINDOW of SAME SIZE as seen from EYE LEVEL
EYE
WINDOW of EYE LEVEL

Fig. 64.

though seemingly a mistake, was intentional, the theory being that at the height of the eye-line of an observer upon the ground there would be to the upper portions a foreshortening due to the angle at which they were seen, and, in consequence, a greater height was given to these portions in order to counteract that foreshortening.

In a similar way this may be applied in a proportionate

degree to the height of the window panes in the upper windows of even a small house. For though the height of the upper floors is not great, yet it is at once obvious that any vertical height looked at from a point on the level will appear greater than when seen from any other angle. Consequently the upper panes of the upstairs rooms should be slightly taller than those of the rooms downstairs: and though this may, if desired, be worked out exactly to a larger scale each time, practice will be found to give a rule of thumb which allows about an inch additional in the height of the panes for 12 feet of height.

## Window Openings.

Sash windows are often preferred by many on account of the fact that the upper portion may be left open during wet weather; and in a less degree ventilation may be obtained at the meeting rails by raising the bottom sash slightly, the cill being constructed as shown in fig. 65, by which means any direct opening at the bottom rail is prevented.

However, the point is not of so much importance now as in the days when there was only one kind of casement window, and that the type which was side hung and opened outwards. With this, it is true that it was difficult in some states of the weather to keep it wide open without admitting the rain. Though even into this matter common sense may be permitted to enter, with benefit. For it would be only driving rain which would find entrance through a casement opening sideways, and driving rain is driven by the wind from one direction or the opposite with regard to the window of a room; and casements are generally formed of two opening lights which are hung one right hand and one left. So that if the wind is driving

the rain from the left hand, as will be obvious, the left-hand hung window will be the one to open, and *vice versa*.

However, casements are made nowadays to open in almost every conceivable way. They are side-hung, to open outwards and inwards; centre pivoted at top and

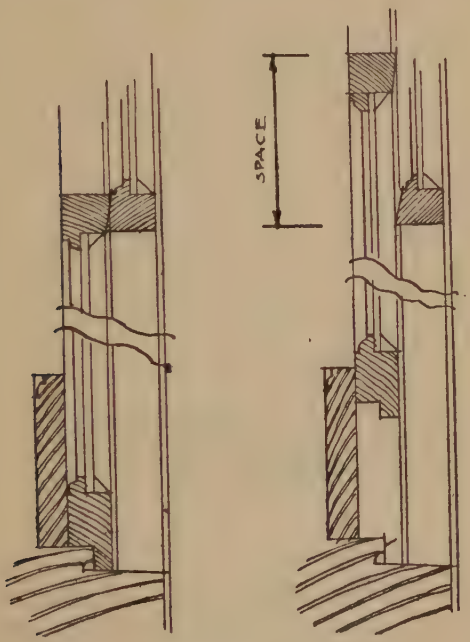



Fig. 65.

bottom; centre pivoted at the sides; top hung to open outwards and bottom hung to open inwards, these last two being mostly applied to transom lights. Casement windows are also formed of fixed light, having a pane or a portion hinged to open as a casement within a casement. And whilst most of these forms are possible of construction

in wood they are now made in steel at a price comparable with the cost of the wooden window.

A point in favour of the metal casement which it possesses as quite individual to itself is that of the patent hinge, which permits of the outside of the glass being got at to be cleaned. This is a very real objection to the casement side hung to open outwards. The windows to the upstairs rooms can only be cleaned from outside by means of a ladder, and it is not everyone who possesses a ladder, or who if they do possess one cares to mount it.

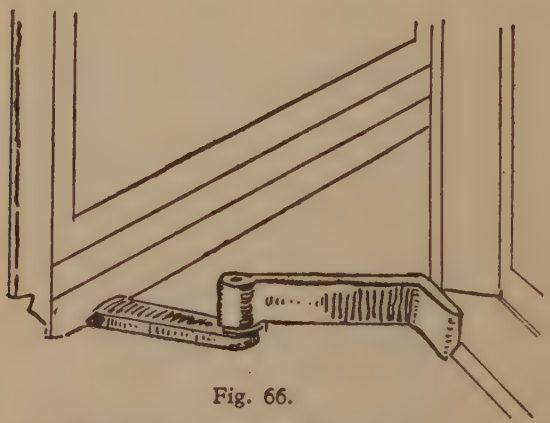


Fig. 66.

To do away with this difficulty casements in metal are designed with specially projecting hinges which provide a space when the window is opened of sufficient width for the hand to pass in order to clean the outside of the glass.

## Casements and Shutters.

Another point of interest, and it may be of some humour, with regard to casements, may be noted.

Certain styles of design are thought to call for wooden

shutters, often more or less brightly painted and temperamentally designed. These are thought to give a character to the house. Though in these days, when fresh air and sunlight are considered so essential to health their practical value is not obvious. Neither are they always practical possibilities. For instance, let us suppose a three-light casement window hung with the two side lights to open outwards. The designer has shown wooden shutters with studious zeal to every window, and has painted them the very brightest green that his paint box contains: also he has shown even beautifully and heartfully designed hinges, and these he has painted very black. On paper they are indeed exceedingly decorative.

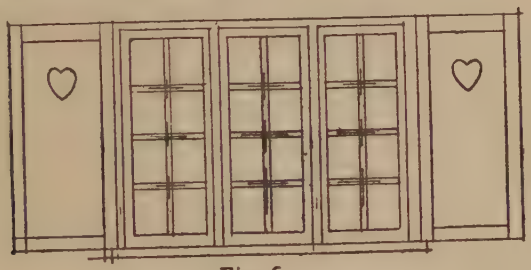


Fig. 67.

Let us imagine that the building is approaching completion and all is good in the eyes of the designer, awaiting only the crowning glory of the heartfelt shutters. He has come to inspect the child of his brain, and the builder's foreman approaches him with a question he has not been able to answer for the carpenter. "How do we close the shutters from inside the bedrooms?" There is only one answer—"We don't." The only way to close hinged shutters to side-hung casement windows that open outwards is from the top of a ladder outside: and it may be doubted if many clients will be found so enthusiastic over

art that they will go to the limit of climbing a ladder every time they want to close their bedroom window shutters.

The bitter truth is that casements must be made to open inwards unless shutters are to be hollow mockeries.

## Screens to Windows.

There is a tremendous moral pressure exerted by custom. If one were to suggest fitting fly screens to every window and door opening one would be thought peculiar in England. Yet in America and Canada he would be peculiar who neglected to do this.

Notwithstanding the fact that we have no greater love for mosquitoes and gnats than has the American, notwithstanding our yearly propaganda against the house fly, from which one learns amongst other things that the fly is born in offal and flies straight from perching upon decaying matter to settle next, it may be, upon one's food, carrying innumerable disease germs on its feet, we do not fix fly screens, just because it is not our custom to do so. Arguments in favour of health or even life cannot stand against custom.

Yet to fix adjustable fly-screens during the summer months, fitted to frames which exactly fit every door and window in a house, is a simple matter, and one which greatly enhances indoor comfort ; and their storage during winter, though perhaps often inconvenient in the small house, is not insuperable.

It is of course difficult to fix a screen to a casement window which opens outwards, but it is not impossible, yet they are obviously more easily fixed to lifting sash windows, with which the screen is fixed to the frame, and the bottom sash works up and down behind the screen.

The only window to which custom in England permits

of the use of a fly screen is the larder window. Here, though the larder more often than not communicates directly with the kitchen, which of all the rooms in the house is most favoured by flies, we do fix a fly screen. Concerning this, being a permanent fixture, it should be noted that ordinary steel wire gauze very soon rusts and will than easily get broken. To guard against this perforated zinc or copper wire screens should be used.

## Chapter XI.

## Roofs.

### Using Roof Space—Nurseries in the Roof.

IT is not a difficult matter to take any house in which the efforts of the designer have fallen short of the best, and to find space in it, or the possibility of finding space with very little additional expenditure for at least another room, if not more than one. Every house must have a covering, and except where that covering is flat, which is not often so in England, there must be some space between the roof rafters and the ceiling joists of the upper rooms. In most instances this space is used for nothing more than for housing water tanks, and sometimes as an unfinished storage space for trunks.

This matter also concerns the external appearance of the house. A steep pitched roof always looks better than a low one, and in countries where there is any appreciable fall of snow or rain a steep pitch is a very considerable practical advantage. But they are not popular with builders because more material is required in their construction. For obviously to cover the triangle shown in fig. 69 requires more material than to cover that shown in the preceding fig. 68. A detail drawing to scale will show exactly how much this difference is; and it will be found that it is not so much as might be supposed. Yet is it not disputed that there is a difference and that it costs more?

But is it cheaper in the end to build a low roof, the

Plate III*a*.

space in which is of no use for habitation, or to build a steeper roof, thereby gaining one or two additional rooms and so making a bigger return on the outlay either in rent or sale price possible? Viewed in such a light the low pitched roof is wasteful and consequently the more expensive; and once again, it is essential that there should be no waste in the small house.

The addition of bedrooms in the roof naturally necessitates the addition of a second staircase, but this need not be elaborate nor of expensive construction. Neither need the space occupied by the stairs take much from the floor area needed for the rooms.

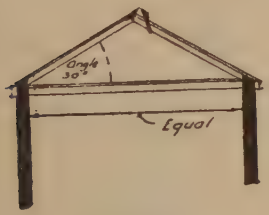



Fig. 68.

Fig. 69.

In this skill in design will often be put to test perhaps more than in any other matter. Where one has two slopes, that of the roof and that of the stairs, it is obvious that when possible these two are better placed with relation to each other when they are as near parallel as may be than when running in contrary directions to one another.

It may often be that no additional head-room is required than is to be gained from designing a staircase, as in fig. 70. But as this will sometimes occupy too much of the floor area required for the rooms it may be more economical to gain bedroom space even at the expense of

a dormer window necessary to give the headroom required for the staircase. Neither need dormer windows be a very expensive matter if they consist only of structural necessities and are free of any applied ornament. Of course, any cutting about of a roof is an expense. Sawing and fitting occupy time, and time has to be paid for. There is no disputing the fact that dormer windows add to the cost of a house, but, as has been pointed out with regard to stairs, where they enable rooms to be added with a conse-

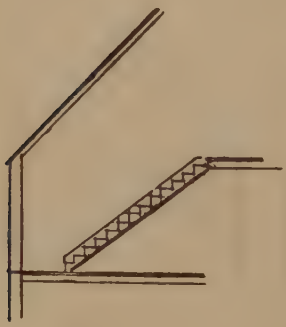


Fig. 70.

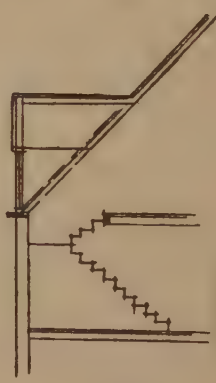


Fig. 71.

quent increase in rental value or sale price, they are not an expense, but a saving. And that they may be constructed so as to improve the appearance of a house from the outside is also beyond dispute.

As a point of detail in the structural design of a dormer and its subsequent effect upon its appearance, the following may be noted. Dormer windows often look thin at the sides or *cheeks* as the triangular space at the side is called, thus communicating to the whole roof an appearance of a lack of proportion. The dormer looks too light for

Plate III*b*.

the roof. This again is often the result of a desire to save money. But if the dormer corner be framed up, as shown in fig. 72, having a doubled corner post, thus enabling a wide *fascia* strip to be nailed on to cover corner posts,

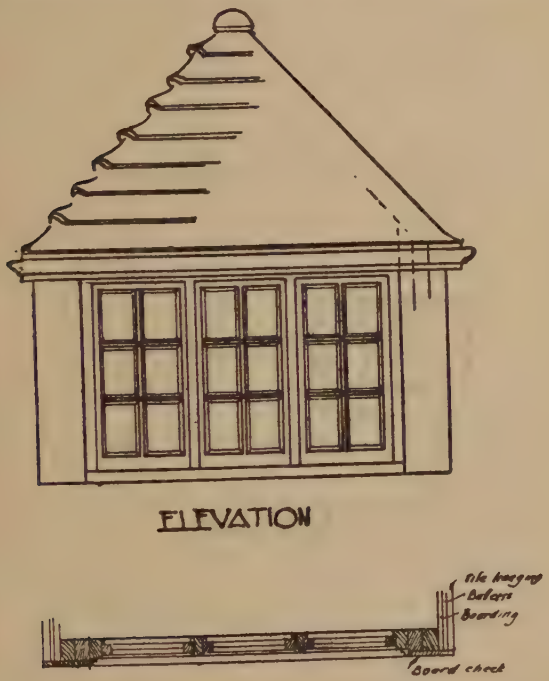



Fig. 72.

window frame and the edges of whatever material is used to cover the sides, an appearance of substantiality rather than slightness is gained, and by the cheapest and most reasonable construction.

An example of a well designed dormer window was

given on page 96, and this also afforded an example of the truth of the statement that dormer windows need not of necessity spoil the appearance of a roof. Further as an example of the additional space gained by the aid of dormer windows for lighting rooms and to house the staircase, fig. 73, is a plan of the rooms in the roof provided thereby. From this it will be seen that two good-sized

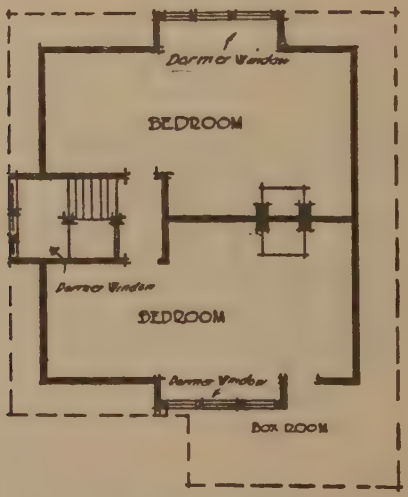



Fig. 73.

bedrooms are provided, as well as a useful box room space in the gable. The plan given here is that of the second floor of the house, shown on page 96; and even at the risk of appearing to stress the point unduly it should be thoroughly realised that the space occupied by these two additional rooms was here in any case, and that it has been rendered usable only by the construction of dormer windows. This, therefore, is an excellent example of how

to save space and make the most of every possibility in designing a small house.

Some of the various forms of dormer windows and uses to which they may be put are shown on Plates III*a* and III*b*, and though some of these could not hardly be described as economical, yet they do show that dormer windows do not necessarily spoil the appearance of a building from outside if they are designed in keeping. Once again it is really a matter of proportion.

The matter under consideration at the moment, however, is not dormer windows, except in so far as their use enables the space in the roof to be used, whereas without them it would be wasted.

## Nurseries in the Roof.

There is perhaps no better nor more economical use to which the space under the roof can be put in the small house than for the accommodation of a day and night nursery. This does not mean relegating the young to the attic so that they may be out of the way, but rather providing them with accommodation wherein their views of life, as it seems to them it should be lived, become possible and permissible in conditions suited thereto. And whilst upon this subject, which though not design has a distinct bearing on it, it is advisable that most of the difficulties which occur in family life as between young and old arise from the failure on the part of the elders to recognise the undeniable fact that children, though human, are a different type of being from their elders. The proper realisation of this fundamental principle is a necessity if the householder, especially of the small house, is to have any reasonable expectation of comfort when he has become a family man. For from that time when his

young begin to move about the views of the two parties, young and old, are diametrically opposed. For instance, walls, which to the old are satisfactory only when they

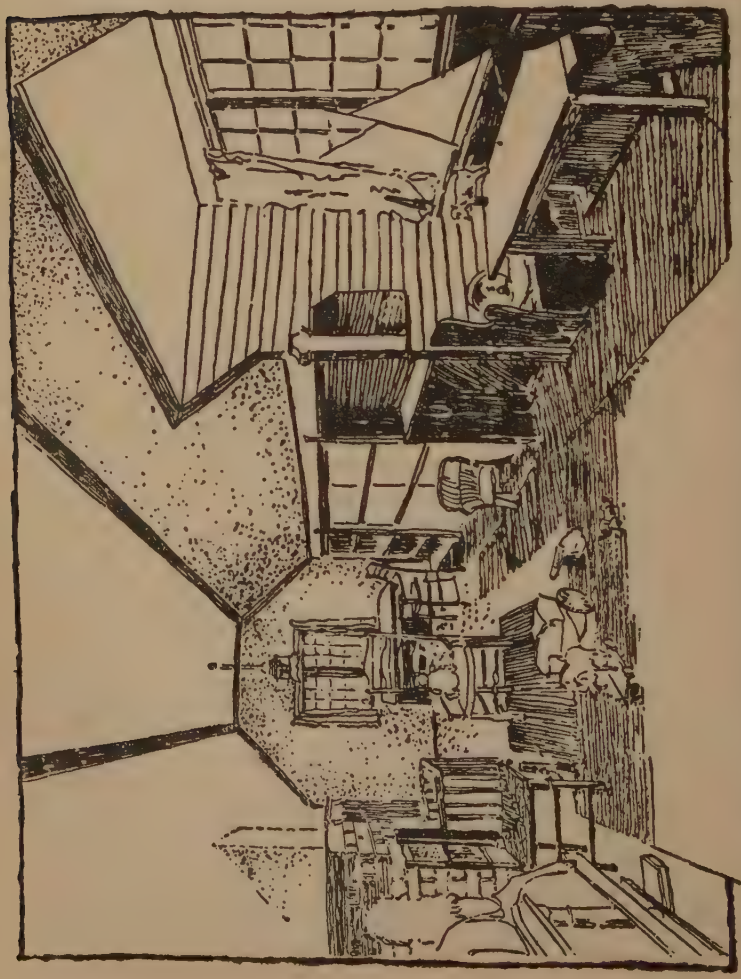


Fig. 74. A Nursery in the Roof, by C. H. B. Quennell, F.R.I.B.A.

present an uncracked and unbroken surface, are to the young very mines of investigation, especially if the plaster is at all soft. Therefore how can persons holding such contrary views of walls be expected to treat them in the same manner? Obviously they cannot. Also to the young noise is essential to the proper enjoyment of life; whereas to their elders it is a thing that can be very comfortably done without.

Consequently though under the same roof a room removed from the living-rooms of their elders as far as possible is a desirable thing for the young in a small house; and for this the space under the roof affords several special advantages. For the ceiling can be low, and that a good part of this is sloping will not matter. That it can be boarded, or better still covered with a wallpaper.

## Chapter XII.

### Roofs—*continued.*

Protection—The Determining Factor—45 Degrees Never Right—Tiles or Slates?—Cutting—Hips—Ventilation.

THE winner of a housing competition who furnished his house with a flat roof was foolish indeed, but the assessor who awarded him the prize was far more so.

For while there is something to be said for all types of roof in England, there is nothing to be said for the flat roof but that it is entirely unsuitable. From the artistic point of view it is bad, for it is ugly ; and from the practical point of view it is unsuited to our climate. A flat roof can never be made to look beautiful, and consequently the only excuse for its employment is that the climate is one which renders a sitting-out and possibly a sleeping-out place desirable for a greater portion of the year. On a sun-dried plain, where the only shade to be obtained is the shade of night, a flat roof to sit out upon and to catch the cooler air is in every way desirable. But nowhere else is this so, and certainly not in Britain.

For with us in Britain a good part of the year it is dull, if not actually raining ; and under grey skies the flat roof is æsthetically wrong in the first place. Also where there is much rainfall nothing could be more foolish than a roof so formed that it will catch all the rain that falls within its area.

Fig. 75. A Gable Obviously Correct.

Fig. 76. An Unnecessary Gable.

## Protection.

The main purpose of a roof is protection from the elements, and this purpose a well designed roof should express in its formation. In a practical way its most desirable feature is a capacity to throw off those that fall from above. These, of course, are rain and snow, and with us, of late years, the latter has not mattered much, though the fall of snow does affect the roof, and is a factor in determining the angle of the roof. This point is rather interesting, for at first sight it may appear that wherever there was likely to be any fall of either rain or snow a steep pitch to throw it off would be the most suitable. However, with snow such is not the truth. Snow does not, like rain, run off a roof as it falls, but it collects until a thaw comes or its weight grows too heavy for the slope, when it slides. Consequently where a steep pitched roof would slide the collected snow very soon, a flatter pitch will allow it to collect until the thaw comes to melt it gradually, when the water may be taken care of by the gutters and downspouts without any sudden sliding of the mass. It is for this reason that in countries where the snowfall is great, such as Norway, Sweden and Switzerland, we find flat pitched roofs having a wide projection at the eaves. This last, of course, being to throw off the snow well clear of the house should a slide take place either from the mass becoming too heavy for the slope during a prolonged fall, or during a very sudden thaw. Wide eaves are also to be found in countries where there is considerable sunshine, and any added shade is desirable wherever it is to be obtained.

But with us neither excessive snow nor burning sunshine are considerations demanding care. With us it is rainfall. And for this it is obvious that the most service-

able form of roof is one which will throw off the falling water as quickly as possible, allowing it as little time as may be to collect and so to penetrate. Consequently it becomes clear that our old-fashioned steep pitched roof has more to justify it than, as some might think, mere fancifulness on the designer's part. And if we consider even that dispassionately why should a steep pitched roof appeal to the artistically-minded any more than a flatter one if it be not just this now so oft-repeated consideration of fitness or suitability to the purpose for which it is designed?

## The Determining Factor.

This question it is that brings us to the whole pith of the matter; what is the determining factor in the designing of our roofs so that they may be suitable. Obviously with a climate like ours, which is "everything by starts and nothing long," it must be a matter of compromise. For where we have a good deal of rain, a good deal of sun, some dull weather and some snow, a type of roof designed for only one of these could not be suitable for all. Therefore the roof which we have had forced upon us until it has become known as the English roof, is a compromise, having qualities which in part meet the requirements of all these various kinds of climate. Perhaps the leading characteristic of our weather is rain, for though our rainfall may not be so great as in some countries, yet it is probably true to say that there are few weeks in the year in which there is no rainfall on at least one or two of the days. Consequently the main consideration in the formation of the roof will be a slope best suited for throwing off the rainwater, and for this, up to a point, there can be nothing better than a steep one. With rainfall especially, when driven by wind in a direction approaching the horizontal

the nearer any surface on which it falls is to the horizontal the less will the water collect. That of course is obvious, but it is often necessary to go back to the obvious in finding reasons for customs which have been so long accepted that they are no longer questioned.

Further there being not a great amount of snow is another reason why a steep pitched roof is permissible. The two facts would point to a roof being best when it is steepest, and so it would be except from the point of view of cost. A steep roof uses up more material than a flat one, as was indicated in a former chapter; and this fact has led builders to prefer the flat pitched roof. However, as was explained, the policy is a short-sighted one, as a very flat roof provides no accommodation for anything but perhaps the water tanks, whilst a steep pitch makes possible the addition of one or more rooms.

## 45 Degrees Never Right.

Consequently, as a compromise between the steepest and the flattest of pitches possible one of 45° is often employed. Yet it is a peculiar fact in connection with this, due no doubt to some form of optical illusion, that the angle of 45° never looks quite happy. Why this should be so is beyond the writer's knowledge, but a fact it is, as

Fig. 77. The Same House with Three Pitches.

he has frequently proved, that a little bit more or even a little bit less looks better than an exact 45° pitch.

Also there is the matter of sunshine which affects the type of roof used. In countries where there is a great deal of hot sunshine a wide projection to the eaves is desirable, whereas where there is more grey dull weather than sunshine anything casting a shade over the face of a building only increases the gloominess. Here again with us it is a matter of compromise. We have days on which the sun shines as brightly as in most parts of the world, and we are not without our days of gloom. Hence the projection of our eaves has come to be not too wide nor too shallow in actual figures anything from 2 ft. 4 in. to 1 ft. 2 in.

It is just these two points, the fairly steep pitch and a fair projection at the eaves which gives that "cosy" nest-like covering to our houses, so typically British.

## Tiles or Slates.

As to whether roofs should be of tile or slate that is a matter of individual taste where it is not one which local supplies will decide. For obviously it would be silly to import tiles into a slate district, and *vice versa*. Where tiles are used there will always be on the part of the artistic architect an inclination towards a hand-made sand-faced tile of varying colours that will offer a surface to the toning effect of the weather; and on the contrary the purely practical-minded person will prefer pressed tiles with a smooth surface, which affords no lodgment to vegetation and so retains its original colour for many years. It is also claimed by the practical man that machine-made tiles are less likely to crack, and so spoil the even surface, but this the writer is not inclined to agree with entirely, hand-made tiles having a surface which the weather hardens the longer it is exposed.

So far as any form of decoration in tile work on roofs is concerned this seems to be entirely out of place on especially a small house, which of all classes of buildings must rely for its appearance upon the proportion of its main lines, and not upon any form of applied decoration. All forms of decorated ridge tiling and pattern roof tiling are best avoided. Indeed nothing looks so well nor makes such a good job as a half-round ridge tile both for ride and hips; and if there is no practical need for any other form, why use it?

## Cutting.

Much cutting up of the roof not only increases the expense considerably but also gives a fussy appearance, and further it is generally the result of bad planning of the floors. For the roof in good design should be the outcome and express the plan which it covers. This point is an important one, for how often one sees gables appearing in

Fig. 78. A Cut-up Roof.

roofs when there is no practical reason for their introduction. A gable is required only to roof some projecting portion of the building which cannot be covered in by the main roof, it is then quite in place, but to introduce a gable for no other purpose than to improve the appearance of the design is a dishonest thing to do, besides being foolish because involving unnecessary and meaningless waste.

## Hips.

It is sometimes preferable to hip back a gable roofed projection for reasons of outline or symmetry, and it has been much disputed as to which costs more, the gable or the hip; but experience has proved that where there are several gables or hips the cost works out about the same whichever is used.

In connection with hips a point of optics is noteworthy. It is this. When looked at from below a long single span roof hipped at the ends looks to have a flatter pitch at the hipped end when the angle of the pitch of the hips is the same as that of the long side. Consequently it is advisable always to run the hip at a steeper pitch than that of the main roof.

For artistic effect a waviness of outline is often desired in a roof, and this is sometimes brought about by introducing tilting fillets and battens under the tiling for no other purpose than to give that waviness. However, this seems to be rather straining after effect. All that is really permissible in this way and in fact demanded by the constructive needs is to fix tilters against walls and chimneys that cut through the tiling, and also on eaves and verges. Such an increased slope then has the effect of causing the rainwater to run off the edges more quickly and so be less likely to cause leakage by hanging about at the joints.

## Ventilation.

An important point, often overlooked, especially where the roof space is not used, is that roofs should always have a very efficient provision made for ventilation of their interiors, as a protection against dry rot. This must be a through ventilation, having inlets and outlets, and can

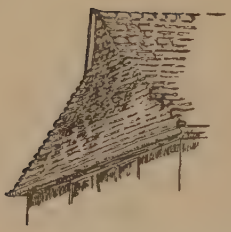


Fig. 79. Ventilated Hip.

Fig. 80. Ventilated Gable.

best be effected by forming the inlet at the level of the rafter put in that part of the wall between the rafters known as beam filling and the outlet at or near the ridge. For this last small gables are often introduced into hips and vent bricks into the tops of gables proper.

## Chapter XIII.

## Chimneys.

Proportion in Chimneys—External Chimneys—Construction—Chimney Pots—Flues for Gas Fires—Practical Hints.

NEXT to the roof, possibly the chimneys contribute most to the character of the small house. This may perhaps seem somewhat an overstatement to us in England who have grown so used to seeing even the small house with many chimneys; but it will not seem so if one has travelled in countries where the small house is furnished with central heating and only one fireplace, that in the kitchen, the flues for both of which, if they are not run in one, are united into one chimney. Then one feels the loss of something in the exterior of the house, something to which we have grown accustomed as lending weight and dignity to our design. This something is the chimney. For even if the small house in England has only one chimney, and very few have, it contains at least one flue for each of the living-rooms, one for the kitchen and one each for the main bedrooms, and as the dimension of a flue is 9 in. by 9 in., surrounded by at least a $4\frac{1}{2}$ in. outside wall and $4\frac{1}{2}$ in. divisions, even a single chimney must have fairly ample dimensions. And, as it rarely happens that all the flues can be united into one chimney, though such a practice is the most economical where it can

be effected, there are generally two and three chimneys to even the smallest of houses.

Further, as chimneys, to be practical, that is mainly not to cause smoky fires in the rooms, need to be carried up above the highest part of the roof, being consequently both substantial on plan and projecting a fair height, it

Fig. 81. Old-World Cottage with External Chimney.

will be obvious that they cannot help being a noticeable feature.

Consequently it behoves us to design them so that they are not offensive. Once our practical requirements are met, the least we can do is to cause no offence to anyone by fussiness and attracting undue attention to what, after all, is a means of polluting the fresh air. Though, if we can go further and charm anyone who may see our chimneys by the excellence of their design, then we shall give

character not only to our house, but to the surrounding neighbourhood in which they may be built.

So that we have reasoned ourselves into a position with regard to chimneys as follows—They are as a matter of practical fact structures formed for the purpose of conveying offensive fumes into the fresh air and their existence at all is an offence against the community; so that the least we can do is to design them inoffensively,

Fig. 82. Same Cottage without Chimney.

for to design ugly or fussy chimneys is to add insult to injury; but if, on the other hand, we can design beautiful chimneys we are, in a measure, apologising for our offence.

Looked at in this light, to design them well becomes a duty; and as a guidance we cannot do better than consult what the readers of this book should by now have come to regard as our invariable finger post in design—suitability to purpose.

What, then, is the purpose of a chimney, and how can that purpose be most suitably expressed? The purpose of a chimney is to convey smoke and fumes into the air with as little inconvenience to ourselves and to our neighbours as possible. (One would like to think the recognition of the latter was universal.)

No doubt, if we never went outside our houses, a metal pipe with one or two bends in it would be the most serviceable form of chimney; but such a blatant ugliness would offend even the most practical observer from outside, and to anyone having artistic susceptibilities it would cause considerable hurt. In fact where utilitarianism only is considered, such as in the Canadian log hut, a bent stove pipe is all the chimney there is, and it serves the purpose required of it effectively. Therefore to argue, as is frequently done, that it is wrong and a waste of money to beautify our chimneys, would lead one who held that view back to the bent stove pipe. But no one really could prefer such an eyesore to a well proportioned brick or masonry chimney stack. Therefore it would seem better to acknowledge that we do like a beautiful chimney and to try to beautify them wherever possible, and to count the expenditure as money well spent.

## Proportion in Chimneys.

What constitutes beauty in a chimney? Here, again, as has been so often mentioned before, it is first and foremost a matter of suitability to purpose and of good proportion.

The main purpose of a chimney is to carry the smoke well away from the house. Consequently any chimney which is not extended sufficiently high above the roof to do this will look stunted and wrong because it is wrong in

that it causes the fires to smoke. It is not performing the purpose it was built for. Again, if to save bricks we make a chimney consisting of a 9 in. by 9 in. flue with a $4\frac{1}{2}$ in. wall all round it, it will look too slight because it *is* too slight. It should have at least one wall 9 in. thick. Similarly, if a chimney is so situated on plan that it cuts

Fig. 83. Artistic Chimneys.

through a hip or valley it looks awkward and out of place because it *is* so. Nothing should be allowed to cut a hip or valley rafter if it can possibly be avoided, because it is weakened thereby, and it requires additional construction to enable it to perform the functions which hip and valley rafters do perform; and this, of course, is to carry the

rafters which are cut on to them, and also to act as a tie in the roof structure.

Except for these few restrictions one may design a chimney in any position and of any shape that seems good to one. In fact much may be made of it and a skilful disposition of a chimney will often become the main feature giving character to the whole house.

Fig. 84. A Combination External Chimney.

## External Chimneys.

How much this may be so is to be seen from figs. 81 and 82, which represent quite an ordinary cottage in the one with an outside chimney which at once becomes the main feature, tastefully disposed at what is otherwise a bare and uninteresting gable end, as is to be seen in the second figure. Of course, such massive chimneys are as often seen in old cottages in the building of which, as much, if not more material often was used, than for the rest of the building, would be rather an exaggeration in modern work,

mainly because the chimney no longer serves all the purposes that it used to serve. Then it housed on the hearth what might be considered as a little sitting-room which was formed by the ingle nook screens and seats to protect those sitting around the fire from draughts. Also brick ovens were often built in the thickness of the chimney wall and racks were suspended in the wide open flue for smoking hams. Chimneys there are which have rooms, secret hiding places in their width, but that is another story and they are exceptions.

Nevertheless, there are distinct possibilities about the external chimney for the modern house. As was discussed when the plan was being considered, circumstances may arise which render the externally projecting chimney helpful internally, such as when all the obtainable space possible is required inside the room. Then, if tastefully designed, the outside chimney may boldly be made a very definite feature. Again, an artistic irregularity may be added to the outside elevation which otherwise might be rather plain and uninteresting by combining what would otherwise be two chimney stacks which do not come one over the other in some such manner as is shown in fig. 84. Such a form is perfectly legitimate construction. In fact the fires burn the better for the bends in the flues, other things being equal, than if they were straight. The saving in having one stack with its corner work instead of two is a considerable item; and the result is an artistic effect which the two chimneys run straight up would fail to give

The structure of chimneys and the various types, is not within the province of the present book. The point that it is desired to make is that seeing that chimneys there must be, we should, in order to design well, so dispose them that they become pleasing features in harmony with the rest of our building.

## Construction.

In so far as the construction affects their appearance, it may be permissible to discuss the matter here. This mainly concerns the cap of the chimney. In ordinary circumstances in which the house stands out in the open and away from anything which would cause down-draughts, the purpose of the chimney cap is to serve as an offset to

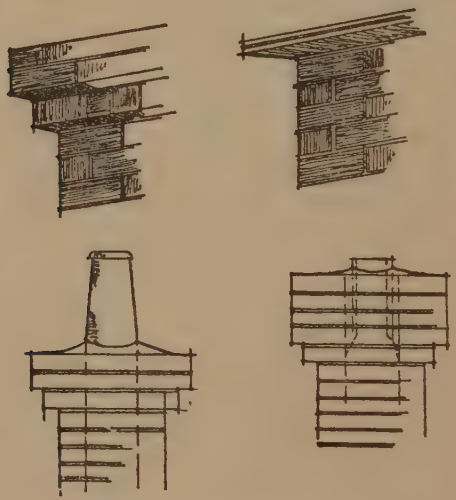


Fig. 85. Chimney Caps and Pots.

throw off the water which collects on the top of the chimney, so that it shall not run down the faces of the chimney. This purpose therefore is served by any projection however simple it may be; two or three courses of bricks or even a double course of tiles will serve.

## Chimney Pots.

It would be difficult to believe that there is anyone to whom a chimney pot is a beautiful thing were it not for the zeal with which they are openly displayed, in spite of the fact that there is no need for a pot to appear at all. The purpose served by the chimney pot is that of narrowing down the flue at the top in order to increase the draught and to prevent down-draught. This being so, a pot or even an agricultural drain pipe embedded in the flue will

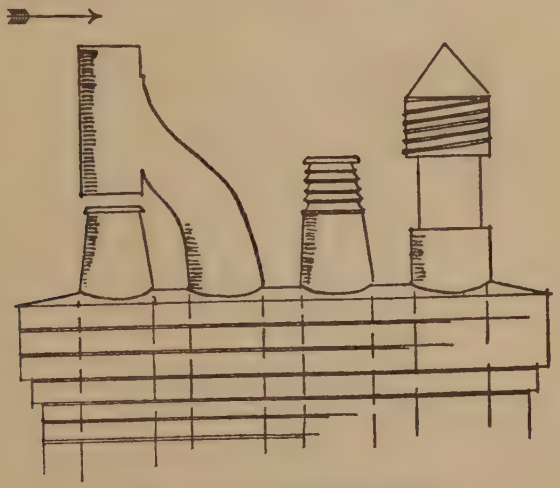


Fig. 86. A Very Ugly Sight.

serve just the same purpose as if it were stuck on top of the stack in vulgar display of its own nakedness.

The practice becomes atrocious when various designs of pots are stuck on one chimney; though of course there is a practical reason for this, or at least one would hope so, otherwise it is a criminal act. And here it may seem

that the leading motif of this book is in dispute. If, one might object, good design consists in giving expression to the practical requirements of the structure, why is not such an object as shown in fig. 86 beautiful? The various pots and cowls are obviously there to prevent the fires from smoking. That is their purpose and they express that.

Certainly they do, but they also express something else, namely, that the flues have been improperly constructed, or that the chimney is not tall enough, or that there is a down-draught from some building or other cause near-by. Consequently, being an external expression of a

Fig. 87. Clustered Flues.

fault, they are ugly, and that is the one good thing that can be said about them, they are honest enough to be ugly.

Here again, if we take the ugliest object of the lot, that shaped as in fig. 86, the object there is to help the draught by causing one across the top of the flue either in the direction of the arrow or in the opposite direction, where such a purpose could be served equally well by a drain pipe-vent let neatly into the side of the flue, as shown in fig. 89, or again by a cap with a flat top or curved top, as shown in fig. 89.

Any of such designs express quite openly their purpose,

and if well proportioned, are not unsightly, and may be made in every way as serviceable as the ugly waisted pot or cowl.

## Flues for Gas Fires.

Whilst the reasons given above account very largely for smoky fires, perhaps the most frequent cause of all is the construction of the fireplace opening at the point where it is arched over to narrow down into the 9 in. by 9 in. flue. Frequently square angles are left in this space behind the front arch and these form cold air pockets in which the smoke circulates until it finds its way down and out into the room. Again, in many small houses the length of flue above the bedroom fireplace is of necessity too short to ensure a good draught.

For these reasons and also on account of the cost of coal there is a growing tendency to use gas fires in the bedrooms. A fire in a bedroom is rather a luxury to most of us, and in these days our purses often will not run to coal fires which have to be lit some hours before we use our bedrooms and which also, of course, increase domestic work considerably. Whereas a gas fire can be quickly lit and extinguished.

But the 9 in. by 9 in. flue required for the coal fire is no longer necessary, nor indeed is it advisable for the gas fire. The area is too large, and the square shape, on account of the corners, inadvisable. With the 9 in. by 9 in. flue where there is no smoke to increase the volume the corners permit of eddies, which, growing cool, cause down-draughts. Consequently special flue or flat section made of sand and cement is now to be obtained.

The inside dimensions of this flue are 12 in. by 2 in. and it can be built in flush into a 4½ in. brick partition. It is built up in blocks 9 in. high and the faces are scored

for plastering. An advantage in using such a flue in bedrooms is that having no projecting chimney breast, the fireplace may be situated wherever is most desirable in the

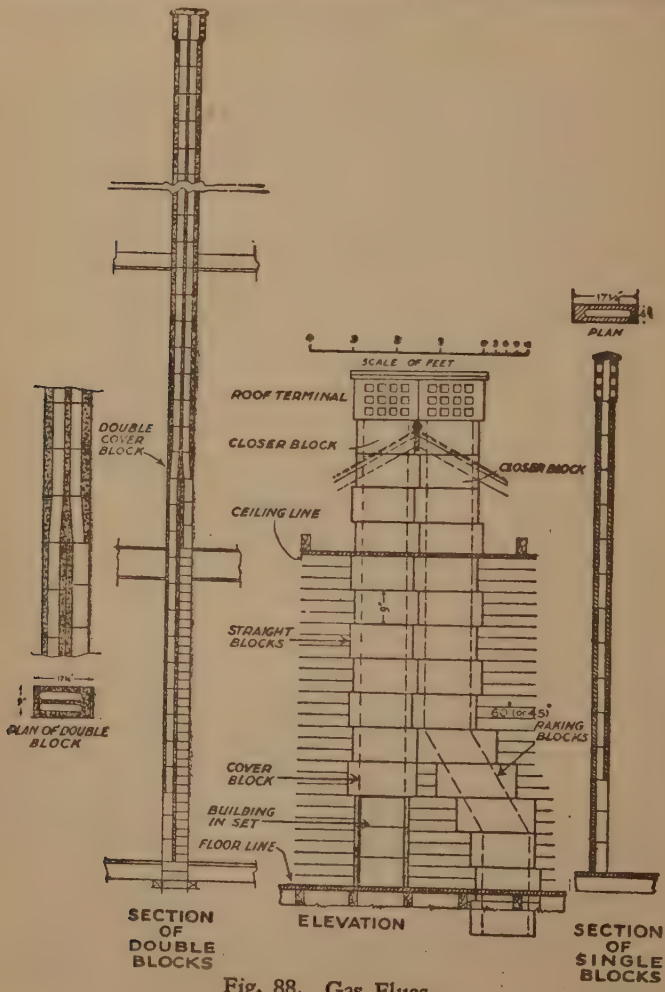



Fig. 88. Gas Flues.

bedroom without regard to the position of that in the room below. Incidentally also a saving of floor space is effected, which, as has so often been mentioned in this series, is of such vital importance in the small house. Further and again, as has been pointed out, anything which reduces domestic work is to be welcomed, and in this case the doing away with the corners created by the chimney breast means less dust traps difficult to sweep. Indeed, such a flue has many points to recommend it, though it cannot be said to be anything but ugly where it comes above the roof. But here again it has a saving grace, for it is not absolutely necessary that it should show above the roof. So long as the roof is

Fig. 89.

well ventilated, as has been recommended above, and this should be the case with all roofs, this flue may terminate in the roof space where the gases will do no harm to either timber or metal.

## Practical Hints.

A practical hint in construction, though not really affecting the external elevation, may be given here for the reason that it is not as a rule to be found in the construction books, and its omission is so often the cause of damp on the chimney breasts of which it is so difficult to trace the cause. This is that all chimneys, especially those built of porous brick, are the better for a lead damp course extend-

ing right across their plan with holes cut, of course, the size of the flues, at the level at which the chimney intersects the roof. This prevents the damp percolating down the chimney from the top and being driven out to the surface by the heat of the fires, and so showing on the chimney breast which is the last place one would expect to find it.

For practical reasons and equally for good appearance, one should always design a chimney so that the top of the cap or pot comes above the highest point of any roof in its immediate vicinity, and of course if this makes the stack very long it must be made to look substantial, and in such a case some variation of the section in different parts of the height will help. As for example, the dividing of the chimney into two flues and placing them in plan diagonally to the stack, as shown in fig. 83.

For this reason the multiple shaft chimney stack was introduced to lighten what would otherwise be a very heavy chimney where a large number of flues were run up in one stack. These flues were square cut diagonally and circular and often decorated with a ropework tracery of diaper and other patterns. But they were built in days when the cost of labour made such detailed work possible, and not as now, when one man needs another to lean against while he works in the intervals of discussing labour problems.

## Chapter XIV.

## Some Additional Hints.

THE so-called labour saving devices may, though it is not always stated here that they always do, save labour, but they rarely save expense. There are always to be found comforts and conveniences by one possessed of ample means to purchase them, but the consideration of these is not the purpose of this book. This, as will have been gathered, is to discover how time and money and work may be saved by intelligent thought in designing the home. Whether or not the proud owner afterwards buys a Rolls-Royce, or other luxury, is a matter solely for his own decision.

Nevertheless, certain materials and devices there are by the use of which all three—time, money and work—can be saved by their introduction into the small house owned by the person of moderate means.

Of these it may be interesting to note that the possibilities of cement as the material for constructing the home still remain to be developed. Poured concrete is in its infancy in this country, and if properly treated by the architect a tremendous future lies before it.

### Concrete Blocks.

Whilst concrete blocks are not recommended, all having the same disadvantage that the more impervious they are the more they draw damp to the joints, this defect does not appear when the triangular block is used.

Indeed this block is the only one which the author can recommend for walling in house construction, and having tried it in practice he does recommend it heartily. It has the additional advantage that owing to its shape it can be combined, without weakness, with an internal triangular block of coke-breeze which overcomes the internal damp of condensation so often met with in the concrete wall.

## Wall Board.

This matter of condensation, sometimes such a nuisance in certain districts and in certain atmospheric conditions, is also a point in favour of the substitution of wall board for plaster. Wall board being composed of compressed wood fibre from which all the water has been expelled will, of course, take up moisture from the air when exposed to it. But if the point be recognised and catered for in the method of fixing the wall board, the water of condensation will be absorbed without causing any damage to the wall covering, or the collection of surface damp in drops, as on concrete or plaster walls.

The correct way to fix wall board is to nail it either down the centre or along two edges, leaving the others free to move in contraction or expansion caused by atmospheric changes. The principle is the same as that used in door panels, the edges of which are not nailed but let into grooves. The edges of the wall board being covered by strips or battens are, similarly, free to move.

Wall board has other very definite advantages over plaster. It is cleaner, more sanitary and easier to fix, and can, if judgment is used in designing the substructure with a view to the economical fixing of the wall covering, be made to work out cheaper than plaster.

## Damp and Corrosion.

Against concrete again it is often claimed that it is very difficult to ensure that the walls shall be dry in all conditions. The writer believes that the damp complained of is mostly due either to the condensation already mentioned, or to the use of poor blocks or faulty construction. However, there are several preparations on the market for mixing with or pointing concrete for this purpose, and of these there is one which the writer has found from his own experience to be absolutely effective in excluding damp.

This preparation also, when painted over concrete floors, prevents dusting from corrosion, which is so frequently such a nuisance in garages or any place where machinery is used. A floor painted with this becomes dustless and in some peculiar way soft to walk upon, as if it were covered with linoleum.

## Dry Rot.

Dry rot in buildings seems to be on the increase. Whether this is really so, or that it is one of the results of scientific research being applied to building discovering facts which previously lay hid, it is difficult to say. But there is no doubt that dry rot is prevalent and that it is due to faulty construction. Faulty construction where it exists is often difficult to overcome, and when it has been the cause of dry rot in such positions as under floors, owing to lack of ventilation, there is often nothing to be done but to cut out all the affected wood and start all over again, ventilating the space not ventilated when first built.

However, the same preparation referred to above for use with concrete walls and floors has a preservative effect when used on wood. Moreover it kills the growth of dry rot and protects new wood from attack. Consequently in

old buildings, where dry rot has gained a hold, the woodwork and walls should all be treated with this preparation, and in erecting new buildings all woodwork and walls in such positions likely to breed dry rot should be painted with it as a preventive method. Its use has the additional effect of hardening the wood, and it is consequently very valuable for wood floors, either board or block, prolonging the life and protecting the flooring against wear.

## Fittings.

Whilst it may appear that in all fittings such as fireplaces, interiors, sanitary fittings, etc., there is not much scope within reach of the owner of the small house, yet an intelligent search will soon bring conviction that the range is really very extensive. A great variety is supplied, and anyone not well informed in these matters is recommended to take specialist advice before choosing; as though these adjuncts may all look the same type and design, yet there is in fact much difference in workmanship and consequently the length of life of different makes.

## Chemical Sanitation.

There are still many parts of this country where there is no system of public drainage, and some where there is no public water supply. In these, generally, the earth closet still obtains. Earth is in fact one of the best deodorisers and filters, but such a large quantity is required that in actual use the earth closet generally proves a very insanitary affair.

In such conditions the chemical closet will be found very helpful, and it has the additional advantage of being cheap and effective. Also being inodorous the closet can be used indoors and so does away with that very serious

drawback to the earth closet of having to go outside to an outbuilding which is often very unpleasant in bad weather or at night.

## Using the Roof.

In a previous chapter the roof space was dealt with, and it was explained how this space, so often wasted, might be turned to advantage by being used for additional rooms and especially for nurseries.

However, though there is generally space in the roof that could be used for rooms, it is not always possible to find space on the bedroom floor for the additional staircase required to give access to the roof.

To overcome this difficulty a very first-rate swinging ladder is now made for this purpose. This, whilst being very light and so balanced that a child can work it, is very strongly constructed on the triangle girder principle used in bridges. The ladder takes up no floor space amongst the main bedrooms, as it is made to fit overhead, and by a very ingenious means slides under the floor above.

This ladder is strongly recommended, as though termed a ladder it is not when in use a ladder, but a light stair at an angle quite comfortably usable by anyone. Its use often adds two or even three habitable rooms to the small house, and its cost being small it will be readily conceded that it is a very valuable adjunct.

## Fences.

The Englishman's house is his castle, and however small a castle it may be, he feels he must clearly define its boundaries. Though in parts of America, especially Western America, they manage very well without fences, it is unlikely that we shall ever alter our views in this.

This being so, it is much in our interests that we choose

our fences so that they do not at worst spoil the appearance of our property, and if we can find some form of fence that enhances the artistic appearance of our house and garden, this will be an achievement.

Of the cleft oak paling the best that may be said is that it is not so ugly as a brick wall with an iron fence on top, and it can, by suitable staining, be made unobtrusive. But from the gardener's point of view a fence should serve mainly as a wind screen and yet be light and durable.

Two types of fence there are which surpass all others, and these consist of interlaced slats in one and interlaced or wattled osiers in the other. The first, known as the "Chequerboard" fence, is made up in panels of closely interwoven slats each 4 in. in breadth by $\frac{3}{16}$ of an inch in thickness. These slats are enclosed within 1 in by 1 in. wooden fillets and are similarly stayed in the centre of each panel. Each slat is nailed between two fillets, and all fillets are secured to one another by special fastenings, giving the whole panel immunity from racking and great tensile strength; it is impossible, owing to the interweaving, for slats to become detached as in the ordinary "featheredge" type of fence. The panels, when despatched, are complete in themselves and ready for erection, which is effected by nailing them to the posts and rails which accompany them and are included in the price. Each panel with its post gives a running length of 6 feet, though short panels (not longer ones) can be supplied to complete exactly a required length of fencing; the heights of panels are as required. Posts are 3 in. by 2 in., the 3 in. being transverse to the run of the fence where the most strength against wind and other pressure is required, and their length, in accordance with the height of the fencing, affords from 25 to 31 inches to be embedded in the ground. Top-rails and caps are bevelled and measure 3 in.

by 1 in. and 4 in. by 3 in. respectively. The timber used is best quality red deal, and every part is soaked in creosote prior to assembly. This, which is essential to durability, affords the fencing its weather-resisting qualities, and if given a further coat of creosote every two years, it will last indefinitely.

The "Willow screen" fence is an adaptation of wattled osier to garden fencing and screening but, being confined in panels, eliminates the roughness of ordinary hazel hurdles.

In purchasing these fences, it is always an important matter to make sure that the best are obtained, as durability is a very vital consideration.

In this the original makers having studied the subject from that point of view, and those who have come afterwards, being somewhat in the nature of imitations, whilst possibly achieving the same outward appearance, have overlooked the soundness of craftsmanship which is, if possible, of more importance in a fence than anything else, for a fence so soon becoming rotted and tumbled down, looks unsightly.

## Purchasing Economically.

It will be a matter of the very first importance to the owner of the Ideal House, especially to those in the country, to purchase his requirements as economically as possible. There are so many things required in and about a house that the initial expenditure in building is by no means the end of it. Furniture, household commodities, garden furniture and tools, the laying out of the garden, all these cost a large sum of money—so large is this in fact that many people having strained their purses to gain the house of their dreams have little left for these items which they are forced to regard as extras.

To such it will be of inestimable value to learn of an Association by joining which at a very modest fee they are enabled to effect an economy in their purchases of approximately 2s. 6d. in the £. Membership will therefore render possible many things which would have to be put off and perhaps gone without for many a long day. For example, anyone who has lived in the country where there is no lighting system, and who by means of his membership has brought within his reach an electric light installation of his own, can form some estimate of the almost unbelievable adantages afforded. Certainly every owner of the Ideal House should be a member of this Association.

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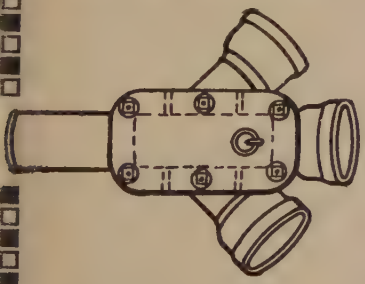

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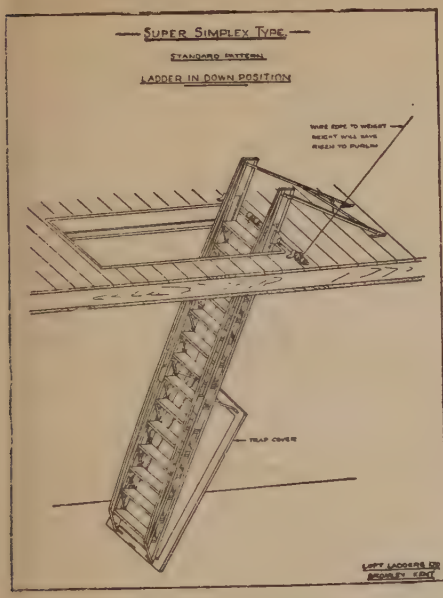


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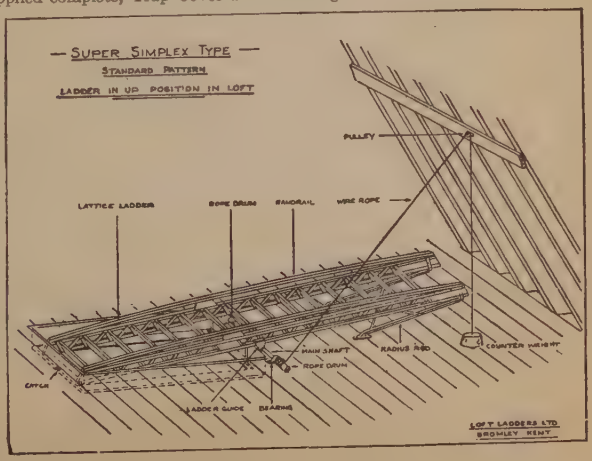

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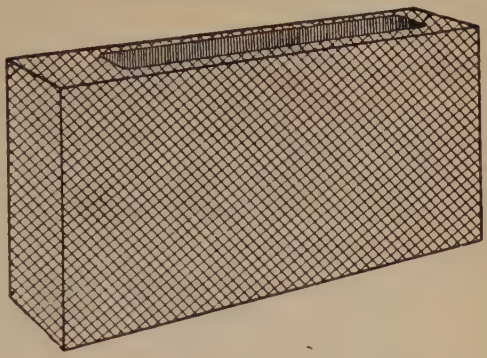

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